THE UNIVERSITY
of EDINBURGH

"As long as I've got my music, I'll get there in the end": A mixed-methods investigation of music listening and health and wellbeing

Joy Vamvakaris

Doctor of Philosophy

The University of Edinburgh

2020

Abstract

Music listening can address a wide range of needs in everyday life, including enhancing health and wellbeing. Research on the relationship between music listening and health and wellbeing often presents conflicting findings on the role of various individual, contextual, and intramusical factors. Furthermore, relevant literature frequently focuses on the effect of music listening on particular health difficulties or specific sub-populations. This thesis explores the relationship between music listening and self-reported health and wellbeing in an international general population. Following a mixed-methods approach, three studies collected data using the innovative method of crowdsourcing, through two online surveys and a series of 20 online interviews.

Survey 1 looked at the relationship between music listening and health and wellbeing in the context of three other leisure activities. Completed by 392 participants, Survey 1 confirmed the positive relationship between music listening and health and wellbeing, not found with other leisure activities such as reading and watching TV and movies. Music listening frequency and duration were positively and directly linked to life satisfaction, as well as indirectly to health, through exercise frequency and duration, which are associated with better health independently of demographic characteristics.

Survey 2 collected quantitative and qualitative data from 215 participants, finding statistically significant links between specific music listening behaviours and self-reported health and wellbeing aspects. These findings, presented in the listener profiles, suggest that music listening differs based on the participants' levels of health and wellbeing, potentially changing between healthier and more well, and less healthy and well times. For example, participants who reported higher health and wellbeing were more likely to report using music listening more flexibly, in social contexts, allowing lower listener control, and aiming to reinforce positive feelings and situations. On the other hand, participants with health difficulties were more likely to report using music listening in a more focused way, requiring high listener control. They tended to listen to music in isolation, aiming to alleviate negative feelings and situations, for example as help with physical and psychological difficulties, and were more likely to be influenced negatively than their healthier counterparts. Furthermore, results signalled the negative effects for some participants, such as increasing their suicidal thoughts and self-harm, with participants having developed safeguarding strategies against this risk. Furthermore, an important extramusical factor is proposed, termed in this research as the "Virtuous Cycle", which is linked to increased engagement with music listening and higher health and wellbeing, independently of particular ways of music listening and demographics; participants who believe music is important, see music listening as a positive wellbeing

influence, and have used it successfully to cope in the past, are more likely to both report listening to music more and being more healthy and well.

20 online interviews were also conducted. Following Framework Analysis, the interviews provided insight into everyday music listening for wellbeing practices, with themes highlighting the dynamic aspects of listening, the variability in response, the potential side-effects and risk, the self-prescription of specific listening or *non*-listening, the participants' learning journeys, the uniqueness of their listening, and its links to their lives. A certain body of music, described in this thesis as "MY Music", was found to be an essential and reliable resource for participants even at their most difficult times. Furthermore, four overarching superordinate themes are proposed: i) *individuality*: how music listening patterns and outcomes differ between participants; ii) *contextuality*: the influence of context on music listening for wellbeing and its outcomes; iii) *adaptability*: the flexible use of music listening, actively adapted to address a wide range of health and wellbeing needs; and iv) *sophistication*: the precision and sophistication of music listening for wellbeing strategies developed by listeners, based on and reflecting their expertise and high-level understanding of music's affordances.

The integration of findings led to the proposed Adaptive Music Listening And Wellbeing model (AMLAW), which presents the link between using specific bodies of music, for example MY Music, and the participants' self-reported levels of health and wellbeing. This model also positions specific music listening behaviours, such as high importance of music or required listener control, on the health and wellbeing continuum, showing how this inextricable link and reciprocal relationship may present itself in the listeners' everyday life.

This research highlights the importance of music listening as a salutary resource in the everyday lives of an international general population. The current findings present specific ways in which participants report using music listening in relation to their health and wellbeing, signal potential negative effects, and highlight the importance of the listeners' individual experiences, context, and personal expertise. This research has important implications, as music listening is frequently pervasive, often curated through platforms that are not yet responsive to the range of listeners nor their current health and wellbeing needs. Music listening for wellbeing is regularly seen as based solely on intramusical characteristics, such as tempo and genre, and individual variation in response and potential negative effects are often dismissed or underestimated. The current findings propose that music listening is linked to health and wellbeing via individual and contextual factors, and highlight the listeners' expertise, which should be taken into consideration in the development of music listening interventions for health and wellbeing, as well as in everyday music listening.

Acknowledgements

Nothing takes place in a vacuum. This thesis has been written through times of great change that will go down in history, for better or for worse: The UK Brexit referendum, D. Trump winning the US presidency, the escalation of the refugee crisis, the vote to end the abortion ban in Ireland, the increasing urgency of climate change, the global #MeToo movement, the UK withdrawing from the EU, and finally, the COVID-19 pandemic and lockdown, to name a few.

In this context, this research was undertaken with the support of many, to whom I owe endless appreciation and thanks.

To my supervisors Raymond MacDonald and Dorothy Miell; you welcomed me to the University of Edinburgh, you shared your knowledge and challenged me, inspired me, and gave me direction when I was lost. I have felt lucky to have you as my supervisory team from the first moment. It's been an absolute privilege.

To the Edinburgh College of Art and Reid School of Music; who funded me to conduct this research and find answers to my curiosity. To the ECA Postgraduate office for their constant support.

To the teachers and mentors throughout my life that believed in me and led by example; Anna Alexopoulou, Christina Anagnostopoulou, Irene Loutzaki, Michalis Keffalas, David Hargreaves, Bridget Middlemas, Nigel Osborne. You make the world a better place and I wouldn't be the person I am today without you.

To the friends and "family" I've gained through this journey:

To Shelly, my PhD sister, who has been with me from the start, and Rocky, Reggie, Victor, and Duke. Your friendship and support have made this journey not only possible, but meaningful, fun, and exciting. I will always look up to you.

To Tomke, Hanno, Henrietta, and Pina, for your support and friendship. Thank you for the laughs and for the rants.

To Gwen; your friendship has been great inspiration and support. Thank you for the laughs, our shared love of books and coffee, and for being such a positive force.

To PhD co-travellers Cate, Diljeet, George and Jeanette, Deirdre, Rafa, Russ, and Una. You shared your knowledge and filled this journey with laughter.

To the "small group": Alex, Henry, Linn, Susanne, José Gil, Rui, and Rute. We all met as bewildered international students at student halls and now we are at different parts of the world. I couldn't have wished for a better group of friends that first year. You continue to inspire and amaze me, each in your own way. A special mention to Rui and Rute, whose endless patience and support as flatmates and friends, and infinite cups of tea, have made this thesis possible.

To the Access QI team at Healthcare Improvement Scotland, Ashley, Colette, and Thomas. You have welcomed me and empowered me to learn so much, your support has been critical for this thesis to actually get finished!

To the participants; this research would not be possible without you sharing your stories with openness and honesty.

To the music; this thesis would not have been written without the support of my "self-prescribed" "writing" music. Norah Jones, Hozier, Ludovico Einaudi, and many others, your words and music have accompanied me on this journey.

Last and foremost, to my family; to my mother and father, my sister, uncle, and grandparents for always being there for me and encouraging me to be inquisitive and resilient, the two most important qualities for a researcher! To Angelo for your support and friendship, and Krotalia and Billie for your hugs and purrs. To James for brightening the darkest days, keeping me sane, and having faith in me. For being one of the few that will brave through the whole of this thesis TWICE, for the oxford commas and removing all the "buts". To Marie, Chris, and Isaac, for your support and all the laughs. The world would be nothing without all of the laughs.

Thank you.

Contents

List of Figures

Chapter 1

Introduction

1.1 Overview

> Some people believe in God; I believe in music. Some people pray, I turn up the radio. Music makes the world go 'round, and for *me*, if music wasn't around right now, I wouldn't be around right now. Music is *everything* to me[1]...

...said fans in the *Closer to the Edge* video by 30 Seconds to Mars, where they take the stage to share their loves and fears, and why music is important to them. Indeed, there are constant reminders of the different roles that music listening can play in everyday life, especially in this age of online communication. Through memes, quotes, sketches, and shared personal reflections on social media for example, music listening is described as helpful and the solution to anything from simple lack of motivation to do housework, to dealing with chronic illness and mental health difficulties. Could any music listening, however, be the solution to everything and for everyone? While music listening has been shown to have positive effects in a multitude of fields, how are these understood and used by listeners in their everyday lives? And how nuanced is the relationship between music listening and health and wellbeing in their lives?

The aim of this research is to explore the relationship between music listening and health and wellbeing in the international general population. This opening chapter serves as an introduction to the thesis, presenting the rationale behind this research, including my personal motivation, and outlines the layout of the upcoming chapters.

[1] Quote from music video by 30 Seconds To Mars performing *Closer To The Edge*. 2010 Virgin Records America, Inc. Directed by Jared Leto as "Bartholomew Cubbins". Emphasis added.

1.2 Motivation for the investigation

I arrived at Music Psychology as I saw it as a fascinating intersection of my passion for ethnomusicology, anthropology, and community music. During my Masters, I explored the importance and role of music in the lives of young people with Autism Spectrum Conditions. I found that the participants were highly interested in music, with music being an exceptionally important part of their everyday lives, enhancing their wellbeing and quality of life. These findings made me wonder whether this would translate to the general population, and led me to reflect in particular on the relationship between music listening and wellbeing in everyday life.

Music listening holds a very important place in my life. I remember the first time I listened to music: I must have been six or seven years old and I found one of my parents' old ABBA tapes, put it into the cassette player and listened to it constantly for days. It wasn't that I hadn't heard music before; my sister and I listened to fairy tales on tape, and we watched TV. However, the excitement of finding this "new" music and putting it on on my own, choosing to listen to it, was different. Growing up, listening to music became as important to me as reading books; a companion and an escape. Living on a small remote island, however, meant that neither could be taken for granted, with no library and no radio signal. Twice a year I was lucky to travel to the city, Athens, and spend my pocket money on books and CDs, and at those moments I had to decide what music I wanted to listen to for the next six months. Many memories are attached to that music, and that seems to often be the case. Many of my participants, for example, vividly recounted the first times they listened to music: what it was, where they were, how it made them feel, even describing the food cooked by their granny on the hob, or their dad's off-tune singing.

Music can undeniably help in so many ways, having seen this as a community musician myself. By now, for most of my adult life I have lived far away from my family, moving frequently; when there was no "community" and access to others was a luxury, listening to music helped me cope. Music has been a constant and close friend at difficult times. Over the years I observed how my relationship with certain pieces developed and, sometimes, had to end. In fact, I am listening to music right now while I write this chapter; I have been listening to the discography of Norah Jones when writing. Her voice soothes me, yet helps me focus. When I sat down to work today, however, this was not what I needed; about an hour ago, my mother messaged me that there had been a strong earthquake in Greece and I've been feeling emotional since then. It is a grey day and I'm alone in the flat. The music that worked for me yesterday doesn't today, in fact it's made me feel worse, so I changed the music.

My motivation for this research is both personal and academic. Fuelled by my love for

music listening and my curiosity about my own listening behaviours, I wish to draw attention to its effects on wellbeing. I passionately believe that music listening can have immense benefits on health and wellbeing, however this relationship is much more nuanced than often portrayed. The often one-sided way of discussing music, either as "cheesecake" (see Pinker, 1997, p. 534) or as a panacea, I feel harms our field and obscures its potential and the real-life use by listeners.

This research set out to find out for whom, when, why, and how music is helpful or unhelpful; to discover the real-life nuanced use of music listening for wellbeing. With the overarching questions remaining unchanged since the conception of my project, I see this research as significantly adding to the literature on music listening and health and wellbeing, but also as a journey into understanding my music listening further, through that of others.

1.3 Rationale for the study

The world continues to face significant health and wellbeing challenges despite great advances in medicine and technology. The ageing population and the great increase of chronic diseases remain an overwhelming challenge for health services in all countries (World Health Organisation, 2015). Mental illness has been on the rise since 2008, in comparison to previous years, and nearly one in 10 people suffer from a mental disorder (World Health Organisation, 2015). Furthermore, one person commits suicide every 40 seconds (World Health Organisation, 2015) and mental health disorders and injuries are now more prominent causes of death and disability than infectious diseases (World Health Organisation, 2019). On the other hand, weak health systems and low budgets fail to support even basic needs in many countries (World Health Organisation, 2018), with only 40% of those living with depression obtaining adequate treatment globally (World Health Organisation, 2019).

It is increasingly recognised that health is linked to many non-health parameters, and that it affects and is affected by economic, social, and environmental factors (World Health Organisation, 2015). For example, youth unemployment is linked to mental disorders such as depression (World Health Organisation, 2015). In this context, the arts have significant value as they can have positive impact on individuals and communities (Fancourt, 2017). In the UK, the establishment of an all-party parliamentary group for arts, health, and wellbeing highlighted an increased interest in the topic. Their 2017 report stated that the powerful contribution of the arts to health and wellbeing must be recognised, as there is a significant and growing body of evidence. They argued that the arts can empower people to take an active role in their health, aid recovery and support longer and better lives, and help with the challenges of ageing, chronic

conditions, loneliness, and mental health. The arts were also seen as enabling more cost-effective use of NHS resources and relieving pressure on GP services. In fact, arts on prescription programmes have been found to represent a saving of £216 per patient, a 37% drop in GP consultation rates, and a 27% reduction in hospital admissions (All-Party Parliamentary Group on Arts Health and Wellbeing, 2017).

Health and wellbeing continue to be an important challenge in today's world, particularly regarding chronic conditions and mental health, and the arts, including music, have shown their potential benefits. Healthcare systems are overburdened; when facing everyday difficulties, individuals often use their own resources to cope. Music listening has been found to be an important resource in this context, addressing a wide range of diverse needs. Music listening is the most prevalent music activity: low cost, transportable and highly individualised (Macdonald, 2013; MacDonald et al., 2012a; Pothoulaki et al., 2012; Staricoff, 2004; Trondalen and Bonde, 2012; North et al., 2004). Furthermore, it can protect from hostile environments, through creating asylum and sustaining one's sense of coherence and security, increasing quality of life (DeNora, 2013; Ruud, 2002; Skånland, 2011; Ruud, 2008). The ongoing challenges and changes of the current socio-economic situation, including the COVID-19 pandemic and the resulting personal isolation situations, highlight the need for culture and art, as essential human resources, to play their role. It is time for music listening to be recognised as the personal wellbeing resource it can be: nuanced, accessible, and personalised.

Music listening and health and wellbeing has drawn increasing attention from academic and other fields. With music streaming comprising nearly half of all global music industry revenue (IFPI, 2019), it is clearly an important part of the music industry, however, there are many remaining questions on how everyday music listening affects our wellbeing. Despite the volume of research in this area, drawing conclusions from this body of evidence is challenging, due to the heterogeneity in methodologies, study designs, analytical approaches, and research aims, across different disciplines. Furthermore, few studies have taken place outside the laboratory and much relevant research has focused on the music itself (stimulus) and discrete responses to specific musical features, such as tempo for example, rather than on the listener's experience (Groarke, 2017; Västfjäll et al., 2012). Moreover, much relevant research focuses on specific population sub-groups, such as chronic pain patients (see Mitchell et al., 2007), post-operative patients (see Engwall and Duppils, 2009), or individuals with dementia (see Park, 2009), and their significant findings may not generalise to real-life situations, the general population, or internationally (Västfjäll et al., 2012). Thus, the implications of these findings are limited when it comes to understanding the unique and variable everyday music listening experiences across different contexts and situations.

In summary, this research explored the relationship between music listening and health

and wellbeing, and the use of music listening for wellbeing, in the everyday life of the international general population, adopting a mixed-methods three-stage design, through the use of surveys and interviews. The findings discussed in this thesis add to the growing body of research on music listening and health and wellbeing, by providing insight into everyday music listening for wellbeing practices, and opening a window into the private worlds of real-life listeners.

1.4 Thesis structure

This research comprised of three studies, which addressed two overarching questions regarding the relationship between music listening and health and wellbeing in the international general population, and its positive or negative outcomes.

This thesis is structured as following:

Chapter 1 situates this research in the context of today's world and describes its relevance. My motivation for choosing to investigate this topic is discussed, explaining the observations and concerns informing the rationale behind this exploration. Finally, the structure of this thesis is presented.

Chapter 2 provides the theoretical context of this research, situating it in the context of relevant empirical literature on music listening and health and wellbeing, and highlights gaps in existing research and remaining questions. This chapter introduces how the concepts of music listening and health and wellbeing are understood and approached in this research. The role of music listening in everyday life is then explored through focusing on music listening functions in general and relating to health and wellbeing. The section then focuses on how music listening is associated with health and wellbeing, establishing the positive impact of music listening on various health and wellbeing aspects, while also emphasising contradictions and highlighting important remaining questions, such as regarding the role of influencing factors, contexts, and individual listeners. Finally, this chapter closes by outlining the scope of this research, introducing the research design, and the overarching and secondary research questions.

Chapter 3 outlines the chosen research methodology; it introduces the philosophical background to the selected methodology and explains the rationale behind this mixed-methods design. This chapter, furthermore, discusses the research design and research tools used for the three studies, and all ethical considerations.

Chapter 4 outlines the design, data collection, and data analysis processes for Surveys 1 and 2, and presents their main findings, focusing on descriptive statistics and statistical associations. Survey 1 confirmed the important role of music listening for health and wellbeing and highlighted the importance of further factors, investigated in Survey 2.

Survey 2 was an in-depth exploration of music listening behaviours and health and wellbeing. It found statistical associations between specific music listening behaviours and health and wellbeing. Music listening was found to change during the lifespan, and the negative effects of music listening were also explored.

Chapter 5 discusses the findings of both surveys. The most prevalent music listening behaviours are presented as a fictional "average" listener, describing how most listeners may listen to music. This section then looks at music listening behaviours that are statistically associated with higher or lower reported health and wellbeing, presenting the fictional "healthy" and "unhealthy" listener profiles. The Virtuous Cycle construct and the mediated relationship between music listening and health and wellbeing are also discussed.

Chapter 6 outlines the design, data collection and data analysis processes for the interviews. Then the main interview findings are presented through eight subordinate and four superordinate themes, using quotes from the participants.

Chapter 7 discusses the four superordinate themes: individuality, contextuality, adaptability, and sophistication, and considers music listening for wellbeing through key points arising from the interviews.

Chapter 8 introduces the AMLAW model, which brings together the quantitative and qualitative findings of this research. The AMLAW model builds upon the associations between specific music listening behaviours and higher or lower health and wellbeing, and reflects how these may change when listeners feel well or unwell. Thus, what music listening may look like at well or unwell times is discussed, including the selection of particular music. The AMLAW model is also considered in light of the four superordinate themes.

Chapter 9 closes this thesis through an overview of this research and its main findings. It presents the contributions of this research to the field of music listening and health and wellbeing, both in terms of findings and methodology. The research limitations and implications are also discussed, as well as future research directions.

This chapter has outlined the motivation and rationale behind this research and has presented the structure of this thesis. The next chapter is the literature review, which introduces the theoretical context of this research and defines its scope and research questions.

Chapter 2

Music listening and health and wellbeing: A literature review

2.1 Introduction

Music listening and its relationship with health and wellbeing is a topic which has attracted much research interest within the fields of music therapy, music medicine, and music psychology, highlighted by publications such as *Music, Health, and Wellbeing* by MacDonald et al. (2012a). Empirical research has sought to explore this topic using a wide range of methodologies and theoretical approaches; using quantitative, qualitative, and mixed methods, through exploratory studies or building upon established models and psychological theories. However, both music listening and health and wellbeing are multifaceted, complex phenomena influenced by many factors, and there is no single answer to how music listening is linked to health and wellbeing in everyday life.

This chapter discusses existing research and literature on music listening and health and wellbeing, highlighting the questions underpinning this research and the need for further investigation. There is an extensive body of literature on the relationship between music listening and health and wellbeing and this chapter focuses on literature that is significant and most relevant in the context of this research. Looking at literature based on a range of populations, both clinical and non-clinical, and a range of health and wellbeing aspects, such as analgesia and mood regulation, this literature review discusses similarities and discrepancies between areas and how research outcomes may apply to the wider general population. Furthermore, this chapter highlights emerging questions and areas for further exploration.

Firstly, this section introduces music listening, approached as an active and engaged aspect of musicking (Small, 1998). Secondly, the chosen approach towards health and

wellbeing is discussed; an important aspect of the theoretical background of this research. Music listening and health and wellbeing in everyday life is then explored through recent findings and literature, finally leading to a summary of the research aims and questions. The topics discussed in this literature review are:

- Music listening
- Health and wellbeing
- Music listening health and wellbeing in everyday life, focusing on:
  - Music listening functions in everyday life
  - Music listening functions in health and wellbeing
- Music listening for health and wellbeing
  - Affect regulation through music
  - Biological response to music listening
  - Music as analgesia
  - Music, emotions, and wellbeing
  - When music listening has negative effects

2.2 What is music listening?

This research explored music listening as understood by the participants, without providing a priori definitions of music or music listening. Research in music can adopt very different definitions of music depending on the field: for example, Musicological studies may approach music differently to Music Therapy research, informing their methodologies and outcomes. In this research, music is seen broadly, as "humanly organised sound" (Blacking, 1973, p. 10). Music is defined as such through one's perception and intention, according to the personal, social, and cultural functions which it serves within specific socio-cultural situations (Elliott and Silverman, 2012). Music is seen as an "open symbol" dictated by personal preference, circumstances, and context (Trondalen and Bonde, 2012). In other words, if the participants saw something as music, then it was explored as such in this study. Furthermore, music and music listening were approached as an everyday resource within the context of the listeners' lives. This means that all music was seen as equal, without making judgements on music "quality" or genre. Thus, music listening was discussed solely in terms of its relationship with the listeners' health and wellbeing, and whether it fulfils the listeners' aims; aesthetics

were approached flexibly and "goodness" was seen as locally situated, with any music being potentially beneficial or harmful.

Music listening was also approached as an active way of engaging with music, equal to performing or creating music. Listeners are active consumers constructing their listening through making decisions and curating their music libraries (Caldwell-Brown and Krause, 2016; Krause et al., 2015; Krause and Hargreaves, 2012; Shifriss et al., 2015). While this seems to now be widely accepted, certain literature discusses music listening as a passive and receptive activity. In the past, music listeners were often placed in a relatively powerless position; the archetypal listener was seen as passive, silent and isolated, and the ideal listening experience was total silent attentiveness (Garofalo, 2010; Sloboda et al., 2009). Certain current research also uses this approach (see Särkämö, 2017). This current research, however, built upon the principle that listeners are active, or as Garofalo (2010) proposes, knowing, feeling, reflexive, and self-aware actors. Music listening was approached as active and embodied, multisensory, and multimodal (Herbert, 2012; Schäfer et al., 2013a). Music listening is equally valuable, creative, and active; it is an engaging act of "musicking" and a mode of covert, embodied, and personal music-making, rather than a passive act of consumption (DeNora, 2013; Morrison, 2009; Schäfer et al., 2013a; Small, 1998). Furthermore, music listening, like music, is "praxial"; it can only be understood in relation to its meanings and values in specific cultural – and I would argue, other – contexts (Elliott, 1995).

Indeed, music listening engages listeners actively in different ways, physical and mental. It can be heard physically through the body and muscles as much as through the ears, especially in certain contexts, such as dance clubs, where the volume and bass are higher (Garofalo, 2010; Sacks, 2007). Music listening is often accompanied by movement, furthermore, which can be considered a form of musical production in its own right (Barthes, 1985; Bigand and Poulin-Charronnat, 2006). Listeners respond actively to music through musical-related gestures, which allow self-expression and support higher wellbeing (Bigand and Poulin-Charronnat, 2006; Chin and Rickard, 2014). Apart from the embodied aspect of music listening, it is also a cognitive and psychological process. Listeners focus on resolving the uncertainties in the unfolding musical narrative and unlock layers of imagination, meaning, and memory, reframing their experiences (Omigie, 2015; Pavlicevic and Impey, 2013). Listening to music, they self-reflect, think deeply on their emotions, and try to understand their own feelings, enhancing their mental and emotional health (Eerola et al., 2017; Gross and Thompson, 2007; Shifriss et al., 2015). Whether through physical or mental engagement, therefore, music listeners are far from passive, and the active ways in which they engage with music listening frame the music listening experience and lead to corresponding outcomes.

2.3 What is health and wellbeing?

In this research, health and wellbeing were approached as linked constructs, situated on a continuum and influenced by factors beyond physiology and biology. The World Health Organisation defines health[1] as multidimensional and complex, a culturally and socially emerging positive concept and resource (Ansdell and DeNora, 2012; DeNora, 2013; World Health Organisation, 1986). In its constitution it states that "health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity" (World Health Organisation, 1946).

In this research, health and wellbeing were approached as complex nature-culture interactions which affect and modify the body over time (DeNora, 2013). Choosing to avoid biological reductionism and medicalisation, as discussed by Daykin (2012), health and wellbeing were seen as open-ended lived experiences, influenced by intrinsic or extrinsic factors beyond one's physiology and biology. The experience of health is, thus, cultural and situation-specific, embedded in physical and environmental ecologies; it is related to decisions regarding health priorities, and how conditions emerge, how they are experienced, identified, best treated, and understood (DeNora, 2013). In fact, health and wellbeing are fully "ecological" phenomena; health is a cultural construction within a specific context and illness a form of "body deregulation" due to social structural demands on human beings (Ansdell and DeNora, 2012; DeNora, 2013). While symptoms are experienced as real, they are also socially established, culturally defined, and augmented or reduced through social ecology; they are personal and situated, influenced by consciousness and mind-body issues, and affected by means beyond mainstream medicine (DeNora, 2013). Health and wellbeing are, therefore, fluid, situational, and complex constructs, understood through lived experience and affected by one's environment.

Health and wellbeing are also individual; they are subjectively experienced phenomena based on one's interpretation of their interaction with the world (Ruud, 2012). Health is linked to one's experiences of control, belongingness, vitality, emotional flexibility, and expression and requires more than just the absence of somatic or mental illness (Ruud, 2010). Personal wellbeing is connected to "ontological security", the sense of being secure and distinct from others, and control, the ability to act in the world as oneself (Antonovsky, 1987; Giddens, 1991; Laing, 1969) and not a "mere ventriloquist for others" (Burns, 2002, p. 301). Therefore, a person's health can be influenced by their environment, their situation and their culture, but also their subjective experience of everyday life; their sense of control and belonging.

[1] For example, according to the Ottawa Charter for Health Promotion "health is a resource for everyday life, not the objective of living. Health is a positive concept emphasising social and personal resources, as well as physical capacities"(World Health Organisation, 1986).

As such, health and wellbeing are influenced by a wide range of factors, both social and individual. Indeed, variations in wellbeing have been attributed to life experiences and how these are interpreted by individuals (French, 2014). For example, a 2017 report by Public Health Wales found that mass unemployment events can have a negative impact on the health and wellbeing of whole communities; such events were associated with higher anxiety and depression, and loss of self-esteem and life satisfaction, and led to a long-term increased risk to mental and physical health for the individuals involved and their families (Davies et al., 2017). Life events, defined as "incidents that can significantly interfere with ongoing life, necessitating adjustment to habitual life either temporarily or on a permanent basis", such as death of a loved one, marriage, or parenthood, also influence health and wellbeing (Cleland et al., 2016, p. 2). Health and wellbeing, therefore, as situational and individually experienced, are highly changeable and depend not only on physical health and treatment but further aspects of one's individual and social life.

This research, furthermore, adopts a salutogenic[2] approach (Antonovsky, 1996). This entails focusing on the entire continuum of health and wellbeing, and on salutary instead of risk factors, while seeing the entire person as a collective, rather than the disease. According to this approach health is seen as a position on a continuum rather than dichotomous, and not a merely physiologically rated state, rather a result of ongoing movement towards health (Ansdell and DeNora, 2012; Antonovsky, 1996). Furthermore, health and illness are fluid; health can be found in illness, and illness found within health; even when ill there may be brief moments when symptoms are alleviated due to extrinsic or intrinsic factors (DeNora, 2013). People's lives, therefore, are comprised of "very well", "averagely well" or "ill" times, rather than participants being labelled statically as "ill" or "unwell" based on their diagnoses; even for participants who face significant health difficulties, there are "well" times, and there are "ill" times for those who do not face chronic illness.

This research sees an axis between health and illness, and builds upon the health-wellness continuum by Els and De La Rey (2006). Positioning health and wellbeing on this continuum, and seeing it as influenced by one's environment and individual characteristics, allows to see the "patient" as active and able to affect their health. Recognising the potential of the individual and their social context to enhance well-being, the focus in the medical humanities is currently shifting from "cure" towards "care and flourishing"[3], supported by one's community, and adaptations of environment according to needs and abilities (Ansdell and DeNora, 2012; DeNora, 2013). Taking

[2] Also found as "salutogenetic".

[3] "Flourishing", according to DeNora (2013) is the individual's ability to feel as if in the flow of things, engaged in creative play, validated and connected to others, alongside the absence or temporary abatement of pain or other health difficulties.

this further, according to salutogenesis, individuals should be enabled to find solutions to problems. The World Health Organisation describes health promotion as a process where the individual is enabled to have control over their health and improve it (French, 2014). Health is an active process of behaviour and performance of one's quality of life (Aldridge, 1996). Indeed, people can influence their wellbeing, exacerbating health and illness through specific and recurrent practices, as their wellbeing is linked to factors under voluntary control and they are empowered to generate and retain a state of health (Bartram and Boniwell, 2007; DeNora, 2013; Hinterberger et al., 2013).

The individual, therefore, is enabled to enhance their health and wellbeing and consider their external and internal resources, to identify and mobilise these, to find solutions and resolve tension in a health-promotive manner (Mayer and Thiel, 2014). Resources that can be used for such purposes may be biological, material, or psychosocial, such as money, social support and intelligence, but can also be a high level of coherence in their lives, supporting a positive outlook and helping to manage stress (Antonovsky, 1996). Health and wellbeing are, therefore, seen as building upon the individuals' health potential and dependent on the mobilisation of one's personal resources, such as those rooted in everyday activities, including culture and art (Antonovsky, 1996).

This does not mean, however, that we all have equal such resources. Social determinants of health and environments have a great impact on health and wellbeing (Mittelmark et al., 2017). External factors, such as social capital and support, influence what resources are available to individuals, for example access to culture and art. Salutogenesis requires use of personal resources, and so depends on one's access to resources. This requires that the individual is able to effectively identify and assess their resources and needs. Furthermore, the fact that the individual has agency in supporting their health and wellbeing does not mean that they are solely responsible, but rather that they can contribute to the salutary process. For this reason, health promotion looks beyond individual risk factors, and focuses on society at large in order to reduce social inequities in health, distribute social resources fairly, and empower people and communities to control their own health (Mittelmark et al., 2017). In other words, to move towards health the individual can use their internal and external resources, but to do this effectively they must assess their needs and use resources appropriately, all the while managing this process and maintaining a positive outlook. This requires support from their communities, access to external resources, and opportunities to develop their internal resources and salutary strategies.

Seeing music listening as a potential salutary resource, this research explored how listeners use music listening in the context of health and wellbeing taking these factors into consideration, for example how listeners learn how to use music listening and how they manage potential risk. In this research music listening was seen as a resource that

individuals can mobilise for health and wellbeing, once they have assessed their needs and determined how and which music listening can help them. Music listening was considered part of the health and wellbeing "ecology". Indeed, it is part of people's lives, able to influence illness representations and enhance physical and psychological wellbeing as part of a reciprocal relationship (Pothoulaki, 2006) and was explored as such.

2.4 Music listening and health and wellbeing in everyday life

The following section discusses the role of music listening in everyday life through different approaches to music listening functions. Music listening is a popular preferred leisure activity and is used for a wide range of functions (Lonsdale and North, 2011; Papinczak et al., 2015). As health and wellbeing are influenced by everyday life behaviours, why and how people listen to music becomes significant. The relationship between music listening and health and wellbeing is then presented through research focusing explicitly on health and wellbeing outcomes, highlighting potential influencing factors and emerging questions in regard to the general population.

2.4.1 Music listening functions in everyday life

Music listening is a significant part of everyday life, because it can be used for a wide range of purposes. Most behaviours that occur in our everyday lives have a recognisable function linked historically to motivation for survival and procreation. Music listening is one of the most popular leisure activities (Greb et al., 2018), it is ubiquitous, and requires an investment of time, energy, and money; however, the functions of music listening are still under discussion (Schäfer et al., 2013b).

When it comes to functions of music and music listening, there are many suggested models and approaches coming from a range of disciplines. David Bowie proposed that music should be seen as a resource akin to water, a basic need for all, while from the perspective of the music industry it should be considered a household utility (Kusek and Leonhard, 2005; Pareles, 2002). As it can perform useful functions for listeners, music could be seen as a resource rather than just a commodity (North et al., 2004), and DeNora (2000) described music as a tool, a "technology of the self" to be used by listeners. Indeed, music listening is a flexible everyday resource and has long been discussed as such.

This wide range of music listening uses becomes even more significant in today's context, as music listening is increasingly portable and personalised. Furthermore, the

increased availability of recorded music has led to changes in the way in which people listen to music; it is now one part of a web of media, with almost unlimited access to music and capacity for choice and diversity (Brown and Bobkowski, 2011; McFerran and Baird, 2013; North and Hargreaves, 1999a). Today's technological advancements can potentially lead to further growth in its utilitarian functionality through increased portability and personalisation (Maloney, 2017). In fact, due to the ubiquity of music nowadays, new music listening functions can develop (Krause et al., 2014a). For instance, an increase in the use of music for emotion regulation has been found by researchers (see McFerran, 2010a; Miranda and Gaudreau, 2011; Saarikallio and Erkkilä, 2007). As listeners can choose to listen to music in diverse situations, they can actively and individually choose specific music that fulfils certain functions in that particular situation for them (see DeNora, 2000; Heye and Lamont, 2010). Music listening is one of the most accessible ways for individuals to engage with music in any setting (MacDonald et al., 2012b). Listening to recorded music is not only increasingly portable and accessible to listeners when they choose, but it is also increasingly omnipresent and pervasive (Greb et al., 2018), and often imposed, for example in shops, restaurants, and bars, potentially against the individual's wishes.

There are many models and theories on music listening functions. One of the first discussions of music functions was by Merriam (1964), who saw these functions as the driver for music listening. Merriam suggested that music has meaning beyond the musical materials themselves, and has distinct uses and functions within a socially constructed context. While Merriam introduced 10 functions[4], many others have been suggested. For example, North and Hargreaves (1999b) later adapted Merriam's model for Western society and music, emphasising the social aspects of music and adding functions related to self-identity, interpersonal relationships, and mood management. Functions of music listening have also been explored in clinical settings, for example by Mitchell et al. (2007), who highlighted significant music listening functions for chronic pain patients. The numerous music function models that exist, however, and the continued exploration of this topic have not led to consensus in the literature as yet (Maloney, 2017).

Due to the wide range and differences in proposed music listening function models, some have also endeavoured to aggregate existing findings and models and assess them through collecting empirical data. These studies of musical functions have produced very heterogenous results, differing based on their focus, for example social identity or cognitive psychology, as well as their target population, resulting in what Schäfer et al. (2013b, p. 2) rightfully call a "hodgepodge". In an endeavour to clarify the functions of

[4]Merriam's (1964) 10 functions of music were the following: emotional expression, aesthetic enjoyment, entertainment, communication, symbolic representation, physical response,and four functions concerning social institutions and social stability.

music listening, Schäfer et al. (2013b) summarised existing literature, creating a questionnaire study to distil the many proposed functions. They produced a comprehensive list of 129 distinct functions, with their survey data pointing to three distinct dimensions, which they called the Big Three of music listening: i) self-awareness, ii) social relatedness, and iii) arousal and mood regulation. However, their list of 129 functions is still unwieldy, and, on the other hand, the Big Three seem to sit at a higher level, merging a number of functions that could be seen as distinct. Furthermore, music listening functions were studied in isolation, as if they exist in a vacuum, without information on when functions may occur simultaneously, or how they are used in everyday life.

Another endeavour to tackle the range of music listening functions was by Maloney (2017), who endeavoured to create an aggregate model of music functions building upon Merriam's work. Maloney's endeavour to clarify music listening functions is noteworthy, as it highlighted that music listening functions in everyday life may differ from those proposed in relevant literature, an important point to be made. This could potentially be due to models being developed without empirical testing and it may also indicate change in music listening functions through time. On this, Maloney (2018) posits that certain functions may be relatively rare in the real world and in specific populations, listeners may not be aware of these, or they may occur concurrently with other functions but are hidden behind more easily recognisable functions, such as relaxation for example. Furthermore, his model reflects the fact that certain functions sit across domains and influence each other, while others may be mutually exclusive. For example, "relaxation" and "stress relief" may be associated with "arousal", but "escapism" and "venting" would probably not occur alongside "flow" and "concentration" (Maloney, 2017). Overall, the models discussed above highlight that music listening can have a wide variety of functions, which can take place simultaneously and influence each other. Listeners may or may not be aware of all the functions fulfilled by their music listening, while these may differ depending on the listener and also change over time.

It is understood that music listening is influenced by the listener's context and situation, which could arguably affect why one chooses to listen to music, and specific music in particular. The music listening function models discussed above did not address the role of the individual listener and only implied the contextuality of music listening functions; indeed music listening functions are mainly studied in isolation. There are few studies on the influence of situations on music listening, and very little empirical research has taken into account situational factors alongside individual differences, an essential step towards understanding music listening and its role in everyday life (Greb et al., 2018). In fact, Schäfer et al. (2013b) recognise the need to investigate further factors relating to music listening functions, such as the potential link between music preference and music choice depending on the intended function. Furthermore, there is

little research that explores which functions are used in which contexts, or what musical characteristics are most appropriate for which functions, elements that could be seen as socially and culturally situated or highly individual (Maloney, 2017). While music listening functions have been studied extensively, questions remain regarding the contexts in which these functions are used and the medium, namely the music, the listeners employ for this purpose, as well as whether these are influenced by situational, cultural, or individual factors and characteristics. Why listeners listen to music is further explored in this study, looking at a range of associated factors, such as specific listening contexts and behaviours, and specifically through the lens of health and wellbeing.

Apart from why people listen to music, how and where listening takes place provides further insight into its role in everyday life. With music listening being highly portable and flexible, one can listen nearly everywhere, but the connection with music listening functions is still under discussion. Music listening takes place mostly at home, while driving or on public transport, and usually in isolation (Greasley and Lamont, 2011; Krause et al., 2014b; North et al., 2004). Depending on the location, certain functions of music may be more frequent than others, and the music listening impact may be more or less intense, for example the use of motivating music in the gym may be more effective than when in bed (Krause et al., 2014b). However, listeners differ greatly, with some consistently listening to music during certain activities which others would never do (Greasley and Lamont, 2011). Certain functions are also more frequent when listening to music alone, such as for concentration or emotional support (North et al., 2004; Rana and North, 2007; Tarrant et al., 2000). The time of day can also influence music listening; it is more likely to be used to pass the time or for concentration during the workday than during the evening for example (North et al., 2004; Rana and North, 2007). It seems, therefore, that music listening functions are linked to listening contexts and situations, however, individual listeners may be more likely to engage in listening in specific situations, since music listening functions are influenced by both individual and situational factors.

While multiple factors, situational and individual, influence music listening, their impact can differ. Greb et al. (2018) found that functions of music varied across situations and the influence of situational characteristics was greater overall. The activity during which music listening took place was the most influential situational factor, followed by the possibility of choosing the music and the degree of attention paid to the music. They also found between-person variability, which highlights that music listening behaviours differ between listeners, beyond situational factors alone. Contradicting findings by Lehmann (as cited in Greb et al. 2018), who argued that listeners always listen to music to fulfil the same functions and clustered individuals into groups, Greb et al. (2018) suggested that listeners adapt their music listening behaviours much more frequently and widely than considered before. They proposed that listeners use music

for specific functions in particular situations, with the situation being the influencing factor of what function music will be called on to fulfil (Greb et al., 2018). While Greb et al. (2018) highlighted the significance of the listening context and the link to music listening functions, there is little in the way of explaining why certain situations are linked to certain functions however. Furthermore, they do not address what music may fulfil particular functions or can be used in specific contexts. The current research explores the situational and individual factors that influence music listening in terms of positive or negative wellbeing outcomes, while also discussing this proposed change and adaptation in music listening behaviours.

In summary, the works discussed above presented different models and ways of approaching the functions of music listening, which are influenced by situational factors and individual differences. This literature also highlighted the many diverse purposes behind music listening, essentially showing that music listening can adapt to fulfil a hugely wide range of needs, and indeed does so according to real world listeners. The significance of situational factors, and the fact that functions may be complementary or mutually exclusive emphasises the need to see music listening functions as contextual, dialogic, and developing. Nonetheless, certain questions remain; the link between specific functions and contexts is elusive. The use of specific music to fulfil these functions and whether it differs between listeners is unclear, and, most importantly, it is uncertain what these findings mean in the context of health and wellbeing. How and which music listening contributes to health and wellbeing, and what music is used?

This research focuses on music listening and its relationship with health and wellbeing, music listening seen as fulfilling certain functions in relation to health and wellbeing. Recognising that music listening has a wide range of functions, this research moved beyond distinct functions and looked at the overall reciprocal relationship between music listening and health and wellbeing. Furthermore, this research also looked at the characteristics of music and music listening behaviours that are associated with health and wellbeing states, and how listeners make these music listening decisions. We listen to music differently, in different contexts and choose different music. When thinking about health and wellbeing, however, are there ways that music listening is linked to health and wellbeing despite and because of our differences as listeners and individuals? Simply put, and further discussed in Section 2.5, for which listeners, when, how, and why is music listening helpful or unhelpful for health and wellbeing?

2.4.2 Music listening functions for health and wellbeing

Given that music listening fulfils such a wide range of functions in everyday life, are specific music listening functions associated with health and wellbeing? Groarke and Hogan (2016) aimed to determine this, with significant age differences in their findings.

Younger listeners emphasised affect regulation, reminiscence, mood improvement, and social connection as contributing to their wellbeing, and older listeners emphasised more eudaimonic functions, such as transcendence and personal growth. While functions of music listening were rated differently between generations, certain functions were important for both age groups, such as affect regulation. As expected, they concluded that the role of music listening functions in health and wellbeing is complex, with some functions having greater influence, differences depending on listener characteristics, and interdependencies between functions.

Further work exploring the relationship between specific music listening functions and health and wellbeing identified 11 factors associated with health and wellbeing in the proposed Adaptive Functions of Music Listening (AFML) scale: the i) Stress Regulation, ii) Anxiety Regulation, iii) Anger Regulation, iv) Loneliness Regulation, v) Rumination, vi) Reminiscence, vii) Strong Emotional Experiences, viii) Awe and Appreciation, ix) Cognitive Regulation, x) Identity, and xi) Sleep functions (Groarke and Hogan, 2018). These findings supported that specific music listening functions are indeed associated with health and wellbeing more than others; for example, affect regulation factors in particular, as they were correlated with subjective, psychological and social wellbeing. Music listening functions were seen as interdependent once more; music listening may fulfil several functions simultaneously, and it is not necessarily a distinct function alone that affects wellbeing. However, Groarke and Hogan (2018) highlighted that the AFML scale did not take into account the music listening context, which could play an important role in how music listening affects wellbeing. Nonetheless, the AFML scale offered further evidence on the complexity of the relationship between music listening and health and wellbeing. Previous research has tended to isolate discrete functions and treat them as independent constructs, oversimplifying the complexity of music listening, however, it has been demonstrated that music listening functions are far from independent (see Groarke and Hogan, 2016; Maloney, 2017); they can be complementary or mutually exclusive, existing in multiple domains simultaneously and influencing health and wellbeing directly or indirectly. Furthermore, Groarke and Hogan (2018) suggested that the individual listener and music listening context may play an important role in the relationship between music listening and health and wellbeing. For this reason, the listeners' existing beliefs, their expectations and intended outcomes were explored in this research, as discussed in Section 2.5. The following section discusses empirical research findings on music listening and health and wellbeing, highlighting the various factors that may come into play.

2.4.3 How is music listening linked to health and wellbeing?

Music listening is known to fulfil a wide range of functions in everyday life and in diverse populations, as discussed above, and listening to music can influence psychological and physiological processes, making it an important tool in enhancing quality of life (Pothoulaki, 2006). Indeed, there is extensive literature on how music can be beneficial on individual, social, and cultural levels as well as on the positive impact of music listening on various health and wellbeing measures; it can influence emotions, moods, and behaviours, it can support identity building, and function as a distraction (MacDonald et al., 2012a; Mitchell and MacDonald, 2011; North and Hargreaves, 2008; MacDonald et al., 2002). For these reasons, listeners use music as a health-enhancing resource, mobilising it as a form of self-therapy or a "technology of health" (Ansdell and DeNora, 2012; Ruud, 2002).

What is then the relationship between music listening and health and wellbeing? How is it influenced by individual differences and other factors? There are many valid answers to these questions; the relationship between music listening and health and wellbeing has been studied by different theoretical fields and with different approaches, leading to heterogenous findings and restricted generalisability. This section presents the context for this research, through an overview of selected relevant findings focusing on recent systematic reviews, highlighting the discrepancies and questions that arise. Health and wellbeing, as discussed above, are complex concepts comprised of several aspects and influenced by many elements. As this research focuses on overall health and wellbeing in the general population, rather than a specific illness or sub-population, the studies discussed below were selected to provide an overview of different aspects within health and wellbeing research. They address different populations, use different methodologies, and focus on different aspects of music listening, contributing to this discussion of how findings may translate to the general population and what factors may be relevant.

More broadly, we can look at music listening in the context of arts and health and wellbeing. Staricoff (2004) reviewed an extensive body of literature on the influence and effects of the arts on health for Arts Council England. This report stated that listening to music is associated with lower anxiety and depression in cancer care, reduction of anxiety and blood pressure in cardiovascular units, and significant clinical improvements in neonatal intensive care. It was used for effective physiological and psychological pain management, and it was beneficial in post-operative care. Furthermore, staff reported that music helped create a non-aggressive and less stressful clinical environment. While this report is helpful to see that music is indeed valuable in the context of healthcare settings, it is difficult to extract what the role of music is, and even more so music listening in particular, and how it may affect wellbeing. Furthermore,

when looking at health and wellbeing in everyday life, findings in clinical contexts are relevant, but it is unclear how they translate to everyday settings. Music and music listening seem to have a positive impact on a range of health difficulties in clinical settings, such as pain and anxiety, but is this the case in everyday life? Through an overview of findings in a range of health and wellbeing aspects, the following sections focus on music listening for affect, stress, emotion and pain regulation, needs that often arise in everyday life, measured using subjective self-reported assessments or "objective" physiological measures, as well as discussing the potential negative effects of music listening.

2.4.3.1 Affect self-regulation through music

Baltazar and Saarikallio (2016) conducted a systematic review of empirical literature on music and affect self-regulation[5]. They endeavoured to address the heterogeneity of findings on this topic by reviewing 34 publications from a variety of research fields, 31 of which focused on music listening in particular. The use of music for affect self-regulation is somewhat universal across populations and, indeed, one of the most frequent tactics used for this purpose (Boer and Fischer, 2012; Greenwood and Long, 2009; Laukka and Quick, 2013; van Goethem and Sloboda, 2011). In order to self-regulate, listeners use music to maintain, maximise, change, or induce affect and a range of elements in their everyday life, such as emotion, mood, focus, and arousal (DeNora, 2000; Thoma et al., 2012a; van Goethem and Sloboda, 2011). In fact, music's most important, valued, and frequent functions are related to affect-regulation, especially when this involves the listeners' favourite music (Schäfer et al., 2013b; ter Bogt et al., 2011).

When using music for self-regulation, the most common goals are to change from a negative to a positive affective state, or to maintain or strengthen one's state by listening to music that mirrors it, both approaches fostering wellbeing and enhancing mood in healthy and clinical samples (Bishop et al., 2007; Gebhardt et al., 2014; Laukka, 2007; Saarikallio, 2010; Skånland, 2011; van Goethem and Sloboda, 2011; Skånland, 2013). On the other hand, however, certain frequent use of music for regulation has been associated with mental disorders and psychopathology in adolescents and adults (Gebhardt et al., 2014; Gebhardt and Von Georgi, 2007; Miranda and Claes, 2009; Thoma et al., 2012b; Thomson et al., 2014). Causation cannot be assumed however, as listeners may use music this way due to their specific needs rather than music listening increasing such symptoms (Baltazar and Saarikallio, 2016). Seeing that music listening for certain purposes can be both helpful and unhelpful, this research aimed to find out what factors are associated with positive or negative outcomes, as further discussed in

[5] Affect self-regulation is defined as the process of creating, changing, or maintaining affective states and can include mood, attitudes, preferences, arousal, stress, motivational impulses, and emotion (Baltazar and Saarikallio, 2016).

Section 2.5.

Further exploring how music is used to self-regulate, Baltazar and Saarikallio (2016) highlighted the significance of external and internal factors. The contexts in which self-regulation through music takes place influence the choice of music, the level of emotional content, and whether listeners will choose to maintain or change how they feel (Saarikallio, 2010; Skånland, 2013; Thoma et al., 2012a). Who the listener is also plays an important role; individual factors such as personality traits, the listener's relationship with music, and their particular difficulties, call for personal, bespoke strategies and influence the listening outcomes (Barcewicz, 2012; Chamorro-Premuzic et al., 2009; Chen et al., 2007; Gebhardt and Von Georgi, 2007; Greenwood and Long, 2009; ter Bogt et al., 2011). The listeners' existing affect and mood, for example, influences why they listen to music, and what music is chosen is based on their personal associations and goals (Knobloch and Zillmann, 2002; Tahlier et al., 2013; Thoma et al., 2012a).

Through this systematic review, Baltazar and Saarikallio (2016) supported the importance of using music for affect self-regulation, however questions remain. They highlighted the wide range of goals and strategies involved in this process, the many contexts it takes place in, noted that self-regulation through music is influenced by many external and internal factors, and that it has also been linked to negative symptoms. Further questions emerge when focusing on health and wellbeing. While they recognise the link between self-regulation and wellbeing, the relationship between specific music regulatory functions, influencing factors, and wellbeing remains unclear; we don't know why listeners choose to achieve certain wellbeing goals through specific music listening, nor whether this is a result of certain internal or external factors, or if it is personal to each listener. This research further explored how listeners use music listening to reach their wellbeing goals and why, while also looking at when it works and when outcomes aren't as intended.

The importance of what music is used for these purposes was implied by Baltazar and Saarikallio (2016), mentioning that listeners often use their favourite music to self-regulate. However, what music is used for what regulatory goals and strategies, or in what contexts, was not addressed explicitly. Lastly, how and whether listeners are aware of using music in these ways is not discussed. To what level are listeners responsible for the success of the self-regulation process? Does a higher level of awareness support higher wellbeing through potentially more successful self-regulation? On the other hand, if certain listeners are less aware of their needs and how to self-regulate successfully through music, might this be linked to negative outcomes? The current research was based on the premise that listeners are highly aware of their practices, their high-level understanding producing rich data presented in the following chapters.

2.4.3.2 Biological response to music listening

In a different systematic review, Finn and Fancourt (2018) focused on the effects of music listening on biological aspects of health and wellbeing. They outlined the great development in understanding the impact of music listening. In clinical settings, for example, music has been found to reduce respiratory rate and anxiety in general patients, anxiety and pain in perioperative settings, and use of medication in colonoscopy procedures (Evans, 2002; Klassen et al., 2008; Nilsson, 2008; Tam et al., 2008). In non-clinical settings, music listening can reduce depressive symptoms, pain in children with physical illnesses, and enhance wellbeing for those living with chronic illness (Batt-Rawden et al., 2005; Chan et al., 2011; Treurnicht Naylor et al., 2011). In turn, Finn and Fancourt (2018) looked at 44 studies in clinical and non-clinical settings, aiming to clarify similarities and differences in the impact of music listening and what factors may influence this.

This review found evidence that certain biomarkers change in response to music listening; biomarkers associated with stress showed the most significant decrease, suggesting that music listening mainly affects us biologically through influencing our stress response, and some studies found changes in physiological response as well (Lee et al., 2017). These results supported previous findings on the beneficial effects of music listening on stress response (Chanda and Levitin, 2013; Fancourt et al., 2014; Hole et al., 2015), and suggested potential wider benefits of music listening, for example, blood glucose decrease in diabetes patients. In contrast to Baltazar and Saarikallio (2016), Finn and Fancourt (2018) found that the music listening effects were irrespective of settings, genre, self-selection of music, or duration of listening.

This systematic review again leads to further questions. Music listening was found to have a stress-reducing effect, shown through measuring biomarkers mainly in clinical settings. Given that this review found no impact due to genre, self-selection or duration of music listening, do these factors not influence the wellbeing outcomes of music listening in everyday life? Could it be that the stress-reduction taking place would be more or less effective depending on these factors? Will any music do? Given the significance of internal and external factors on regulation through music found in the review by Baltazar and Saarikallio (2016), is it likely that internal or external factors do not come into play here? While the current research does not use physiological measures, it is important to note that music listening can have an impact on our bodies, as was indeed often discussed by the participants of this research.

2.4.3.3 Music listening as analgesia

In a further review, Howlin et al. (2018) pulled together evidence on the impact of music listening for pain relief based on 75 interventions. Music listening interventions

for analgesia are used in various contexts, for example in chronic pain, surgery recovery, or during labour, as music encourages the release of endogenous opioids leading to reduction in pain (Jeffries et al., 2003; Mainka et al., 2016). The impact of these interventions was stronger, however, when using self-chosen music, as physiological responses to music are idiosyncratic due to extramusical factors, with preferred music possibly acting as stronger distraction (Huang et al., 2010; Lee, 2016). Specific music does not cause uniform physiological responses across listeners, and meta-analyses have shown that there are times that music listening interventions have the intended outcomes and others when they don't. Indeed, it is unclear how music listening interventions reduce people's experience of pain, Howlin et al. (2018) argue. Four themes arose when looking at the function of music listening as analgesia: i) the significance of the music itself and intramusical features, which impact on pain response and the listeners' capacity for attention, ii) the listener's agency and control, making choices and selecting music based on personal meaning, iii) the multidimensional nature of both pain and the music listening experience, involving cognition, attention, and emotion, and highlighting a range of factors, such as stress, that can impact on outcomes, iv) other beneficial mechanisms activated during music listening which can enhance analgesic outcomes, such as a stronger sense of self and higher self-efficacy and motivation.

Conducting this scoping review through a more qualitative approach, Howlin et al. (2018) make several points worth discussing. Their review highlighted the importance of various influencing factors; contradicting the suggestion by Finn and Fancourt (2018) that self-selection of music doesn't matter, and despite the focus of many studies on particular intramusical features, they argued that physiological response to intramusical characteristics differs between listeners, emphasising the importance of the listener's agency. They also acknowledged the importance of contextual and internal factors, such as environments and emotional interactions. Indeed, they noted that the listener's engagement with the music listening intervention could be negatively influenced by additional emotional or distracting material, and the music must be suited perfectly for the specific listener.

Looking at these findings in the context of the previously discussed reviews, discrepancies and similarities were highlighted. How do the four analytical themes found by Howlin et al. (2018) translate to the general population and everyday settings in regards to the use of music listening for wellbeing in general? The significance of the music itself, the listener's agency and control, the multidimensional nature of music listening, and other beneficial mechanisms, found by Howlin et al. (2018), were further investigated in the current research, as potentially influencing the relationship between music listening and health and wellbeing.

2.4.3.4 Music, emotions, and wellbeing

Aiming to obtain a more holistic understanding of the relationship between music, emotions and wellbeing, McFerran (2016) interrogated 16 quantitative music psychology studies and seven qualitative music therapy studies in her critical interpretive synthesis. In this, she noted that music is often discussed as achieving non-musical benefits such as developmental, cognitive, emotional, and social benefits, and that the positive outcomes of music are often highlighted even during negative psychological circumstances (Chin and Rickard, 2014; Miranda, 2013; Papinczak et al., 2015; Van den Tol and Edwards, 2013). McFerran (2016) argued that this is due to positive assumptions about the benefits of music and the individuals' positive past experiences. Research in this field, she noted, tends to depict things in a simple binary way, with music usually described as either reliably positive or highly dangerous, rather than acknowledging potential both positive and negative effects (McFerran and Baird, 2013). In this piece, McFerran (2016) argued against binary thinking and showed that the relationship between music, emotions and wellbeing is indeed much more nuanced.

Contrary to discussion above, genres of music are often assumed to serve predictable and specific functions in relation to emotions and many researchers still focus on such characteristics when looking at mental health outcomes (see Bodner and Bensimon, 2015). This analysis, however, highlighted that the genre of music and music preference are factors in the relationship between music, emotions and wellbeing, but as discussed above, the music listening context and the listener's relationship with the particular music is highly important. This synthesis, furthermore, added another factor. McFerran (2016) argued that the impact of music listening varies across the wellbeing continuum, influencing the listener differently when they are well and differently when they are unwell, therefore, no music use is beneficial or unhelpful inherently. Indeed, she highlighted that no music use would be sufficient if maintained despite changes in the listener's mental health; different strategies are appropriate for different times (Saarikallio et al., 2015). McFerran (2016) described how young people use music differently depending on their wellbeing; when optimistic or flourishing, young people tend to use their preferred music to process challenges, however when distressed or pessimistic they use music they have found helpful in the past to maintain or deepen their negative state. When distressed, music is more likely to be used for venting, intensifying or ruminating, while when optimistic it would be used to divert, modify or regulate emotions. Therefore, a favourite song might be used in various ways, even if young people may be largely unconscious of their intentions in selecting specific music (McFerran and Saarikallio, 2014; Saarikallio and Erkkilä, 2007).

Indeed, in further research on music listening in adults with depression, Garrido et al. (2017) found that solitary or group listening can be both helpful or unhelpful depending

on the individual and the coping patterns involved; listeners with maladaptive coping styles were more likely to ruminate using music to intensify negative affect. McFerran (2016), however, argued that avoiding music to avoid this risk is also unhelpful when distressed, since listening can help build resilience and recovery through integrating negative experiences with positive emotions. Furthermore, she highlighted that it is not certain that listening to music when distressed will be helpful, nor necessarily unhelpful either. The fact that music has helped at one time in our lives does not mean it will always help, as it does not act independently, and this is the case even with the same music.

While McFerran (2016) discussed the use of music listening to deepen negative states as harmful, the participants of the current research, however, did not necessarily experience this as negative. Music listening outcomes are discussed in the present research as perceived by the listeners themselves, therefore, if short-term negative effects are seen by the listeners as beneficial in the long-term and in the context of their wellbeing journeys, then this music listening is discussed as beneficial and helpful. In other words, for this research music works when listeners believe it has positive outcomes, whether short-term or long-term, and music does not work and is unhelpful when listeners see it as having a negative impact, against their intentions and in the context of their lives. A further important contribution by McFerran (2016) is the discussion of potential negative effects of listening to music. The author argued that when listeners are vulnerable and are engaging with strong emotions, listening to music may lead to need for further support. Listening to sad music, for example, can be pleasurable at times but can also lead to negative emotions, especially in the context of mental illness, as depressed listeners are more inclined to focus on rumination rather than enjoyment (Garrido and Schubert, 2015b; Gebhardt and von Georgi, 2015; Hense et al., 2014; Huron, 2011; Garrido and Schubert, 2013).

Bringing together quantitative and qualitative findings, McFerran (2016) highlighted the importance of several factors in the relationship between music, emotion, and wellbeing. She confirmed that pre-existing factors, such as the listener's wellbeing, can significantly affect the music listening experience and outcomes. Effects on wellbeing, she argued, don't rely on genres or intramusical characteristics alone, but are also highly influenced by the listeners' previous relationships with the music and their current wellbeing. There is no bad or good music per se, rather there are specific factors that make particular music bad or good for a listener in the moment. She suggested that the music listening changed based on the appropriateness of the strategy in relation to the listener's wellbeing state, with different strategies used at different wellbeing points. She did not specify, however, who judges the music's appropriateness. Furthermore, McFerran (2016) highlighted the potential risk involved in music listening. Music listening doesn't always help, especially when listeners are distressed or vulnerable. She

suggested that vulnerable listeners must be allowed to engage their emotions through music but that this should take place in a safe therapeutic context, potentially moving from isolated music listening towards shared music experiences. While this would be undoubtedly beneficial, this is not possible for most listeners, and it is unclear how these findings would translate to the general population. Every individual has times when they are highly distressed and vulnerable, especially around negative life events, such as the death of a loved one. While most research which addresses vulnerable populations focuses on participants who are "chronically" vulnerable, such as people diagnosed with depression, listeners who do not fit that category over an extended time period will go through shorter periods of vulnerability. Do such findings on the "long-term" vulnerable transfer to the general population at times when they face short-term difficulties? When a safe therapeutic context, as McFerran (2016) suggests, is not available what do listeners do? Are the listeners aware that music listening can be unhelpful, and how do they minimise this risk? To address these questions, the current research explored when and why music listening is unhelpful and for whom, exploring the listeners' understanding of negative effects and their impact.

2.4.3.5 When music listening has negative effects

The tendency to discuss music in a binary and positive way, and in relation to healthy behaviours is reflected through confirmation bias, the frequent assumption of beneficial outcomes, and the limited literature highlighting the potential negative effects of music listening (Hense et al., 2018; McFerran, 2016; McFerran and Hense, 2017).

Iyendo (2016) discussed the potential negative impact of sound in his review of music in hospital settings. In clinical settings, sounds such as excessive or nocturnal noise can lead to increased stress in patients and staff, prolonged wound healing, irritability, headaches, and sensitivity to pain (Griefahn and Robens, 2010; Melamed and Bruhis, 1996; Morrison et al., 2003; Topf, 2000; Wysocki, 1996). Unwanted music, however, can also be perceived as noise and therefore have a negative impact on individual health and wellbeing (Brown et al., 2015; Choiniere, 2010; Hagerman et al., 2005). Not all music is beneficial due to differences in musical tastes and preferences, for example between elderly patients and staff, influencing the listening outcomes (Liu and Tan, 2000; Mackrill et al., 2013). Individuals, furthermore, perceive sound stimuli differently depending on gender, age, or sensitivity to the noise source; the elderly, children, the chronically ill, people with hearing difficulties, people with mental illness, foetuses and neonates, and shift workers can, indeed, find sound particularly stressful (Goines and Hagler, 2007; Ramirez et al., 2004; Van Kamp and Davies, 2013).

In a literature review focusing on young people with depression by McFerran et al. (2016), only eight out of 33 studies discussed the potential negative effects of music

listening. Music listening was found to affect three properties, interpersonal relationships, mood, and coping, and various factors were linked to potential negative effects: higher levels of depression were linked to sad music, violent lyrics could increase hostility and aggressiveness, idolisation of musical celebrities could lead to low self-esteem, and negative outcomes were more likely when listening alone (see Anderson et al., 2003; Dillman Carpentier et al., 2008; Hutchison et al., 2006; Kistler et al., 2010; Lacourse et al., 2001). Furthermore, McFerran et al. (2016) argued that a division of listening impacts into positive or negative is simplistic. However, it remains to be discovered what factors may be associated with negative influences on the wellbeing of the general population.

Further evidence on the potential risk involved in music listening is provided by McFerran and Hense (2017). In their chapter they highlighted the significance of influencing factors leading to negative impacts. Choice of music was important, but inherent genre qualities were not that influential. Furthermore, certain music is multi-use; there were songs with which listeners strongly identified, and so were able to express a broad range of emotions (Saarikallio and Erkkilä, 2007). However, the music itself was not responsible for positive nor negative impact, but rather health and wellbeing outcomes depended on the music listening context and the listener's previous experiences, in a reciprocal relationship (McFerran and Saarikallio, 2014). Music listening outcomes depend on the combination of the music, the person, and the situation (Ruud, 2006).

The listeners' perception regarding music listening outcomes may also be skewed. Looking specifically at when music listening can have a negative impact, McFerran and Hense (2017) noted that teenagers seldom acknowledge the darker side of their music listening and often claim that it is exclusively positive. Similarly, McFerran and Saarikallio (2014) found that young people consistently depend on music to feel better when having difficulties; calling music their "best friend", they showed blind faith in its power to help them, without acknowledging their agency in using it towards an intended direction. Nonetheless, several studies have suggested otherwise. Music is not a neutral representation of identity, but the self is projected onto music, which can be problematic in the context of mental illness (McFerran and Hense, 2017). When sad or depressed, listening to music can make young people with mental illness feel worse and, for some, music listening is of limited help or a very short-term solution (Beckmann, 2013; Cheong-Clinch; McFerran and Hense, 2017; Saarikallio and Erkkilä, 2007). While these listeners may use music listening with similar intentions, the context of mental illness can have a significant impact on its outcomes. Mental illness may limit the listeners' musical resilience and capacity to make healthy choices, for example to change the song if they find it deepens depression or delete a track associated with past trauma, meaning that that kind of music listening could have a negative impact (McFerran and Saarikallio, 2014). While the risk involved in music listening in the con-

text of mental illness is highlighted here, however, to what extent does this translate into the general population? Furthermore, it is unclear whether the listeners' understanding of the impact of music listening is limited to this binary approach. McFerran and Saarikallio (2014) suggest that young people don't fully grasp the implications of their music listening decisions, relying on their intuition rather than making conscious choices. To obtain deeper understanding of music listening, the current research explored both the positive and negative outcomes of music listening, as two sides of the music listening experience, as well as the conditions around them and how different listeners understand and navigate them.

This discussion of the potential negative impact of music listening is important in the context of health and wellbeing. As McFerran and Hense (2017) noted, it is necessary to integrate both dimensions and acknowledge the potential negative impact of music listening alongside its beneficial effects. Furthermore, music listening should be seen as a reciprocal relationship between the music and the listener; none of the factors involved in music listening discussed above are seen as bad or good as such, as it is the combination of music, listener, and context that shapes the music listening outcome. While choosing the right music is important according to literature, it is not clear how listeners learn to how do this and assess its results. Internal and external factors seem to come into play as well, despite findings by Finn and Fancourt (2018) who suggested direct non-influenced effects of music listening on biomarkers. The music listening context, the listener's past experience with the music, their expectations and intentions, all influence the music listening outcomes and its impact on health and wellbeing. As Iyendo (2016, p. 94) pointedly stated "music is a special type of noise, which, when carefully selected has a recognised calming effect during stressful conditions", recognising its potential negative impact. In the current research, music listening, therefore, wasn't approached as a panacea, but rather a practice that, under conditions, can contribute to a better life; a meaningful resource that can support enhanced wellbeing (DeNora, 2013). It was not seen as an accompaniment or adjunct to medicine, nor a treatment or technique to be taken in a specific utilitarian way that fixes a particular problem. Music listening was explored as an individually customised, preferred tool. The aim was not to make blanket recommendations, but to further the understanding of the relationship between music listening and health and wellbeing in everyday life.

2.5 Moving forward: This research

This chapter outlined relevant literature on music listening and health and wellbeing, highlighting how it relates to this research, presenting emerging questions and providing opportunities to contribute to the existing body of work. Music listening and health and

wellbeing has been studied by different scholarly fields and through different approaches, often depicting findings in a binary way and reducing the complexity of findings without reference to context; music is often described as either fully positive or highly dangerous, rather than acknowledging its potential positive *and* negative effects. Furthermore, in most cases, findings were heterogenous, complementary or opposing, with restricted generalisability.

Both music listening and health and wellbeing are complex constructs. Music listening is an active and valuable way of engaging with music, which involves physical and mental processes and is influenced by and influences the listeners' lives. Health and wellbeing are lived experiences beyond physiological symptomatology, they are fluid and ever-changing and situated on a continuum. They are influenced by a wide range of factors and can be enhanced by individuals using their personal resources. In this context, music listening is seen as more than a popular leisure activity; it is a personal resource that can be mobilised for wellbeing. Music listening has a wide range of discrete and sophisticated functions in everyday life, it is an adaptable resource and tool. Music listening functions can differ between listeners and contexts, and change over time, however, the role of music listening context, and music choice and preference is unclear. While music listening functions present the purposes for which music listening may be used, what is their role in the context of health and wellbeing? Music listening can be beneficial in many settings, but what does this mean in the everyday life of the general population? What internal and external factors are associated with the beneficial use of music listening? When is music listening helpful and when is it not? What is the role of the individual listener or the specific selected music and the listener's associations with it? And how aware are the listeners?

Aiming to address these questions, and reviewing the existing literature and findings in this area, this thesis considered several limitations in its scope:

- Music listening was seen as an active way of engaging with music, and other ways of engaging with music, for example performance, were not explored.
- Health and wellbeing were approached through a salutogenic approach, rather than through the biomedical model often employed in music and health research, for example by Finn and Fancourt (2018) as discussed above. Health and wellbeing were seen as inextricably linked and were discussed throughout this thesis as one construct with different aspects[6]. They are experienced states on a continuum, involving multiple factors beyond physiological symptomatology, and were investigated using self-report measures, rather than physiological measures.

[6]Health and wellbeing are discussed together throughout the thesis. They were, however, measured separately in Surveys 1 and 2, as outlined in Chapter 4, with distinct aspects of health and wellbeing discussed in the findings sections.

The participants' health and wellbeing was discussed and reported by themselves alone, and third-party or expert evaluation of their health and wellbeing was outside the scope of this research. Therefore, when music is deemed helpful by the listeners, it is because they felt it helped them at the time, often interpreted in hindsight, however this is not to say that a medical expert would necessarily be of the same opinion. Music listening is discussed by the listeners and for the listeners alone.

- This research focused on the general population instead of specific sub-populations. It did not focus on any specific health difficulties or sub-populations, but used a highly diverse international sample in order to explore potential cross-cultural differences and similarities, aiming to address the lack of cross-cultural research in this field (Saarikallio, 2012). Participants were drawn from diverse cultures and age groups, they led very different lives and faced different difficulties, health-related or other. This focus and aim to reach a diverse, international population led to the specific mixed-methods research design, as well as the employment of crowdsourcing methods, as further discussed in Chapter 3.

Within this scope, this research investigated the relationship between music listening and health and wellbeing in the everyday lives of the general population. The research questions, presented comprehensively in Table 2.1 and Table 2.2, enabled the study of areas that have emerged as gaps in the literature as discussed in this chapter.

The overarching research questions investigated in this study are:

1. For which listeners, when, how, and why does music listening enhance health and wellbeing within the international general population?
2. For whom, when, how, and why is music listening seen as unhelpful by listeners in the international general population?

This chapter has drawn attention to the gaps in existing literature regarding the relationship between music listening and health and wellbeing in the general population, especially in terms of influencing factors and wellbeing outcomes. These two overarching questions were intentionally phrased openly, as opposites, to capture the potential two sides of music listening, both the positive and the neutral or negative effects, addressing the above-mentioned positive focus and imbalance in existing research on the topic. The two questions, furthermore, are intentionally broad, allowing this research to begin by asking broad questions (Survey 1), gradually exploring more specialised and focused questions (Survey 2), leading to the exploration of the individual lived experience of music listening (Interviews). The questions were designed to study both large-scale trends and more individualised findings; seeing listeners as the experts in their own music listening and their wellbeing, this research aimed to combine quantit-

ative and qualitative data, using an exploratory approach to obtain further insight into the relationship between music listening and health and wellbeing in everyday life.

These research questions served as a reference point throughout the investigation. They were addressed differently in each study, becoming gradually more focused based on each study's aim and previous findings. Each stage included more specialised questions and a smaller, more focused sample. These more specialised questions, presented in Table 2.1 and Table 2.2, emerged from the existing literature or each previous stage's findings. As further discussed in Chapter 3, Survey 1 was a short online survey aiming to find overarching trends within a large sample looking at music listening in the context of popular leisure activities. Its findings were used to generate areas of focus and specialised questions for Survey 2. Survey 2 was an extended online survey exploring music listening and health and wellbeing in a large sample, looking at associations between specific music listening behaviours and health and wellbeing aspects. It included, furthermore, several open-ended questions, to further investigate the listeners' experiences and discover what elements should be explored in the interviews, in order to further understand the relationship between music listening and health and wellbeing in the context of the listeners' lives.

2.6 Summary

This chapter presented an overview of existing relevant literature, providing the theoretical and empirical context for this research. Music listening and health and wellbeing were introduced, followed by a discussion of literature on music listening functions in everyday life, and their role in health and wellbeing. Then the positive and negative impact of music listening on different aspects of wellbeing was discussed through systematic reviews and focused studies, highlighting the diversity in existing approaches, methodologies, findings, and influencing factors. Finally, following on from the points made in the reviewed literature, the scope of this research and the overarching and secondary research questions were presented.

Music listening is engaging and active, and a resource that can be used towards enhancing one's wellbeing. It fulfils a large range of functions, is influenced by and influences our lives. Existing literature on music listening and health and wellbeing suggests a wide range of mainly positive, and some negative, effects on a wide range of populations. Various factors, individual or situational, may influence this relationship. Aiming to obtain insight in regard to music listening in the general population and to avoid positive assumptions regarding its wellbeing outcomes, this research asked i) for which listeners, when, how, and why does music listening enhance health and wellbeing within the general population? and ii) for whom, when, how, and why is music listening seen

Table 2.1: Research question 1.

For which listeners, when, how, and why does music listening enhance health and wellbeing within the international general population?	
For whom does music listening enhance wellbeing?	
Do the positive effects of music listening differ between individual listeners?	Survey 1 Survey 2 Interviews
What individual difference factors are significant?	Survey 1 Survey 2 Interviews
What are the particular individual characteristics that are associated with helpful music listening?	Survey 2 Interviews
How are they understood and managed by listeners?	Interviews
When does music listening enhance wellbeing?	
Do the positive effects of music listening differ between contexts and times?	Survey 2 Interviews
What contextual factors are significant?	Survey 2 Interviews
What contextual factors are associated with helpful music listening?	Survey 2 Interviews
How are they understood and managed by the listeners?	Interviews
How does music listening enhance wellbeing?	
Are particular music listening behaviours associated with higher health and wellbeing?	Survey 1 Survey 2 Interviews
How are they managed and used by listeners in their everyday lives?	Survey 2 Interviews
What are the specific ways that listeners use music listening for wellbeing in their everyday lives?	Survey 2 Interviews
How are music listening for wellbeing strategies developed?	Interviews
How are the positive effects of music listening experienced, perceived, and communicated by listeners?	Interviews

Table 2.2: Research question 2.

For whom, when, how, and why is music listening seen as unhelpful by listeners in the international general population?	
For whom does music listening have a negative impact on wellbeing?	
Do the negative effects of music listening differ between individual listeners?	Survey 1 Survey 2 Interviews
What individual difference factors are significant?	Survey 1 Survey 2 Interviews
What are the particular individual characteristics that are associated with unhelpful music listening?	Survey 2 Interviews
How are they understood and managed by listeners?	Interviews
When does music listening have a negative impact on wellbeing?	
Do the negative effects of music listening differ between contexts and times?	Survey 2 Interviews
What contextual factors are significant?	Survey 2 Interviews
What contextual factors are associated with unhelpful music listening?	Survey 2 Interviews
How are they understood and managed by the listeners?	Interviews
How does music listening have a negative impact on wellbeing?	
Are particular music listening behaviours associated with lower health and wellbeing or negative impact?	Survey 1 Survey 2 Interviews
How are they managed and used by listeners in their everyday lives?	Survey 2 Interviews
What are the specific ways that listeners safeguard against negative music listening outcomes in their everyday lives?	Survey 2 Interviews
How are these strategies developed?	Interviews
How are the negative effects of music listening experienced, perceived, and communicated by listeners?	Interviews

as unhelpful by listeners in the general population?

The following chapter discusses the methodological approach adopted and the research tools used to answer these research questions and address the presented gaps in the literature.

Chapter 3

Research methodology

3.1 Introduction

This research investigated the relationship between music listening and health and well-being. Focusing on an international general population, it aimed to provide insight into both relevant overarching trends and individual experiences, while collecting data in the participants' natural environment. This chapter outlines the chosen research methodology, explaining the rationale behind adopting this research design. The methods of data collection are discussed, namely e-research, crowdsourcing, and online survey and interview research, followed by a discussion of relevant ethical and other considerations.

3.2 Methodological and philosophical approach: Why mixed methods?

This research used a mixed-methods approach in order to explore the relationship between music listening and health and wellbeing in the everyday life of an international general population. It used two online surveys and a set of online interviews, reaching participants through crowdsourcing. A pragmatic perspective was adopted, linking the choice of approach directly to the purpose and the nature of the research questions (Creswell, 2014), and mixed methodology was seen as most appropriate to address the research questions, presented in Section 2.5, as they would not sit comfortably within a wholly quantitative nor qualitative approach.

This research avoided methodological dualism by combining quantitative and qualitative approaches, with the weaknesses of one approach supported by the strengths of the other (Barbour, 2008; Mason, 2006; Meltzoff, 2010; Robson and McCartan, 2016). Traditionally, quantitative research aims to establish causal connections based on re-

liable and valid measurement, replication and generalisation (Robson and McCartan, 2016). Such approaches tend to adopt a positivist or post-positivist perspective, following the paradigm of the natural sciences and seeing reality as objective, despite often taking into account the influence of socio-political factors and the researcher's subjectivity at least to some extent (Philips and Burbules, 2000; Reichardt and Rallis, 1994; Robson and McCartan, 2016). In real-world quantitative research, however, the requirement for strict rules and fully fixed design can be challenging to meet, unrealistic, or even impossible (Robson and McCartan, 2016). On the other hand, qualitative research aims to understand subjective individual experiences and meanings, allowing to share in the understandings and perceptions of others (Creswell, 2014; Robson and McCartan, 2016; Sullivan, 2012). Such research tends to have a relativist or constructivist background, arguing that reality is in no way objective, but multiple, constructed and complex (Kvale, 1995; Schwandt, 2007; Wilson, 1999). Qualitative research uses flexible design and a small participant sample, without aspiring towards generalisability or replicability (Robson and McCartan, 2016).

Despite the seeming incompatibility between quantitative and qualitative approaches - the so called philosophical incompatibility thesis (Bryman, 2006; Howe, 2002) - either type of research can be carried out from a range of philosophical viewpoints, without necessarily requiring a great change in research practices in reality (Maxwell and Mitapalli, 2010; Robson and McCartan, 2016). Furthermore, there are significant similarities; both quantitative and qualitative research attempt to describe or explain psychological processes which cannot be observed directly, attempting to measure or record their effects, and producing data which are a simplified form of experience (Langdridge and Hagger-Johnson, 2009). As a result, this apparent "incompatibility" has also been described as a "false dichotomy", suggesting that researchers should not identify as "quantitative" or "qualitative", as these methods are increasingly combined in practice and mixed-methods research is a now common approach (Johnson et al., 2007; Langdridge and Hagger-Johnson, 2009; Robson and McCartan, 2016). Mixed methods research is supported by a pragmatic and common-sense viewpoint, recognising the importance of the natural world, as well as the social and psychological world, preferring to take action rather than focusing on philosophising and ideological dilemmas (Robson and McCartan, 2016).

This research adopted a pragmatic perspective according to the "real world" availability of resources and timescale, as well as to better address the research questions. The three sets of data, quantitative and qualitative, were brought together for both profoundisation and triangulation purposes; to enrich or tease out important aspects of the data on the one hand, and complement the findings and increase the validity on the other hand (Langdridge and Hagger-Johnson, 2009). This approach allowed for the appropriate integration of findings, with each dataset contributing equally to

the overall research outcomes, whether through confirming other findings, or enriching them and making them more profound.

The methodological tools were assigned explicit roles, with a clear sense of purpose for the combination of methods, as suggested by Robson and McCartan (2016). Specific, yet broad, core research questions were decided beforehand, as presented in Section 2.5, defining the research scope, setting boundaries, and giving direction (O' Leary, 2004). Surveys 1 and 2 were online surveys that measured and identified the degree of association between variables, analysed through an exploratory rather than hypothesis-driven approach, to find patterns, averages and group tendencies (Creswell, 2014). The interviews increased understanding of the constructs studied, employing a more flexible and individual approach. During the design of the methodological tools and the data analysis processes, equal priority was given to quantitative and qualitative elements; neither set of data alone was seen as fully reflecting the participants' subjective experiences, especially given the great diversity in the participant population. The three datasets were collected independently, from different participant samples, analysed separately, and then integrated during further data analysis.

3.3 Research tools

3.3.1 E-research

E-research was seen as the most appropriate way to collect data from a diverse international sample. All three stages of this research took place online, via surveys and interviews, recruiting participants through crowdsourcing, further discussed below. Conducting research online was time-efficient and low cost, and allowed fast data collection and processing (Shapka et al., 2016; Zhang et al., 2017). Furthermore, e-research has been found to produce valid and reliable data, comparable and equivalent to that gathered offline (Gosling et al., 2004; Hewson, 2014; Hughes, 2012; Sethuraman et al., 2005). While the influence of social desirability has been found to be similar between offline, online, and paper surveys, others argue that data collected online is potentially more ecologically valid than face-to-face data collection (de Winter et al., 2015; Shapka et al., 2016; Zhang et al., 2017). In fact, online research can be seen as taking place in the participants' "natural communication environment", given the high levels of internet use and, in this case, the participants already being users of crowdsourcing platforms (Mason and Ide, 2014, p. 41). Sharing information online, therefore, may feel more comfortable for such participants, especially adolescents, increasing participant openness (Barratt, 2012; Cleary and Walter, 2011; Oprea and Stan, 2012; Shapka et al., 2016).

A further important advantage of online research has to do with reaching diverse and inaccessible participants. E-research can eliminate the need for travel and remove geographical barriers, allowing access to voices and experiences of otherwise hard-to-reach populations (Cleary and Walter, 2011; Shapka et al., 2016; Turney and Pocknee, 2005). However, e-research may result in sampling biases affecting representativeness, since many communities and people still lack access to the internet, and users are still likely to be younger, wealthier and more highly educated (Dutton and Blank, 2013; Snee, 2008); this was the case with the current samples as well, as most Survey 2 participants held a higher education degree (69%), however, the participant population was still more diverse than convenience samples. Internet use has grown rapidly, and internet users are now more diverse (Dutton and Blank, 2013). As of July 2019, it is estimated that there are 4.33 billion internet users worldwide, 56% of the global population (Clement, 2019). Internet samples are shown to be of high quality, more diverse and potentially more representative, and can address the over-reliance of researchers on convenience, WEIRD[1], or student samples (Gosling et al., 2004; Hewson, 2014). It is important to accept, however, that online research samples cannot be widely generalised, therefore, this thesis discusses the findings as emerging within the participant population and potentially relevant to, but not "imposed" on, a wider population. The data collected online, and the resulting findings, may not "speak for" the international "offline" population.

Due to its advantages, internet mediated research has flourished over the last decade in many disciplines, with online data collection becoming common in both quantitative and qualitative research (Hewson, 2014; Shapka et al., 2016; Sue and Ritter, 2007). Considering the aims of this research, e-research was chosen as it allowed to reach an extremely large, diverse population of potential participants to draw upon and collect valid data from (Hewson, 2014). The above-mentioned concerns were taken into account, and crowdsourcing, discussed below, was chosen as the best method to further increase and control the sample diversity. Even if not everyone has access to the internet, using the world wide web allows us to access data from across the world, making it a powerful tool for future research (Coomber, 1997; Illingworth, 2001; Lo Iacono et al., 2016).

3.3.2 Crowdsourcing

The data discussed in this thesis was collected using crowdsourcing for participant recruitment. This was highly time-efficient and cost-effective, while allowing access to a highly diverse participant sample (Crump et al., 2013; de Winter et al., 2015). The

[1]WEIRD samples are comprised of Western, Educated, Industrialised, Rich, Democratic individuals (Henrich et al., 2010).

introduction of crowdsourcing added a further innovative element to this research, and was essential due to the research aim of studying an international general population, which would otherwise be nearly impossible.

Crowdsourcing refers to employing the service of a dedicated online community in return for a small fee, and is similar to citizen science as it is an open call for participation by the public (Mehl and Conner, 2013). Advantages of crowdsourcing are fast completion speed, increased population diversity and anonymity, reduced likelihood of social desirability effects, and low cost (de Winter et al., 2015; Mason and Suri, 2012). These platforms are especially useful when studying the general population, as they have large numbers of adult users registered, to which the tasks are offered. In fact, samples reached through crowdsourcing can be more diverse than laboratory samples (de Winter et al., 2015).

Crowdsourcing for research, however, comes with its own concerns. Differences regarding the characteristics of crowdsourced samples in comparison to the general population have been highlighted; they are generally younger, more highly educated, but underemployed (Cooper and Farid, 2016; Kang et al., 2014; Paolacci et al., 2010; Shapiro et al., 2013). Furthermore, differences in financial incentives may lead to bias between countries, as peoples' incomes and financial needs may vary significantly, and special consideration must be given to the compensation offered to contributors, as further discussed in Section 3.4.5 (de Winter et al., 2015). Bias between countries may also be a result of time zone differences; depending on what time the task is launched and distributed, people from certain countries may be more likely to complete the task than others. Crowdsourced participants, furthermore, may behave as "professional" crowd workers. For example, Chandler et al. (2014) found that 10% of workers were responsible for completing 41% of all tasks on one of the available crowdsourcing platforms, *Mechanical Turk*, and such workers, they claim, would have developed skills and behaviours that make them atypical of the general population. However, while these issues were taken into consideration, the advantages of crowdsourcing for this research were seen as outweighing the concerns, especially as the use of crowdsourcing for survey research is relatively new (de Winter et al., 2015), and had not been employed extensively in the field of Music Psychology.

Surveys 1 and 2 were distributed through *Crowdflower* (known as *Figure Eight Inc.* since March 2018), an online crowdsourcing aggregator platform that recruits users through multiple partner channels, and which is not specialised for research purposes. It is estimated that five person-years of work are completed every day on *Crowdflower* and its use for scientific purposes has increased greatly, in areas such as behavioural and psychological experiments, psycho-linguistic experiments, and for investigating public perceptions (Aladhadh et al., 2014; de Winter et al., 2015; Hindriks et al., 2016; Marelli

et al., 2014; Nguyen et al., 2014; Over et al., 2013; Pepper and Nettle, 2014; Wang et al., 2014; Wolf et al., 2015). *Crowdflower* offers a more ethnically diverse and less "professionalised" participant population compared to other platforms, and is appropriate for research, especially scientific surveys, as the data collected has been found to be valid, reliable, and consistent with traditionally recruited samples (Cabrall et al., 2016; de Winter et al., 2015; Peer et al., 2016). While there are no available statistics on its contributor population, *Crowdflower* has been said to have the broadest workforce within crowdsourcing platforms, as it collaborates with many workforce providers (Vakharia and Lease, 2013), and therefore was ideal for the distribution of Surveys 1 and 2.

The interview participants, on the other hand, were recruited through *Prolific*, a crowdsourcing platform focusing specifically on academic research, which offers high-quality, diverse and naïve subjects (Peer et al., 2016). *Prolific* is an Oxford University start-up, an online platform for online research studies. It is used by academic researchers worldwide and has a pool of over 60,000 potential participants. *Prolific* was chosen for the interviews as it is specifically designed for research and allows screening of participants in order to obtain the intended participant sample, which was essential in the interview process. Furthermore, data collected through *Prolific* is equally valid and "honest" compared with other methods, and their participants have been found to be less dishonest and more naïve than other crowdsourcing platforms (Marreiros et al., 2017; Peer et al., 2016). For further transparency, *Prolific* provides detailed statistics of their participant pool on their platform[2].

The use of these crowdsourcing platforms, as discussed, allowed the successful, low cost, and time-effective collection of data from a highly diverse and international sample of the general population, while also adding an innovative aspect to this research.

3.3.3 Online survey research

The first two studies in this research employed online surveys. This was seen as the most efficient way to explore the research topic and questions at hand, collecting both standardised and non-standardised data from a highly diverse and international sample. Online surveys are the most common form of e-research in psychology and an increasingly popular form of non-experimental, fixed research design (Langdridge and Hagger-Johnson, 2009; Sue and Ritter, 2007). They can be superior to other methods of data collection, especially when measuring relationships, as they produce data equivalent to pencil-and-paper surveys, but with advantages in terms of shorter timescale, and increased sample size and accessibility (Byrne, 2002; Lygidakis et al., 2010; Robson and

[2]Detailed demographics and information on the *Prolific* participant pool can be found on their website.

McCartan, 2016; Shapka et al., 2016). With this research focusing on the general population, it was important that online surveys allowed access to larger samples, whilst being cost effective and distributed easily, also eliminating part of the time-consuming data entry process (Greenlaw and Brown-Welty, 2009; Sue and Ritter, 2007). Furthermore, despite views that surveys are mostly used in quantitative research, they can stand at an intersection between qualitative and quantitative approaches (Druckman, 2005). This feature was used specifically in Survey 2 to collect an initial set of qualitative data, providing insight into individual experiences and acting as a basis for the interview design.

Any methodological decision, however, carries limitations and implications on inclusion/exclusion of potential participants, which must be acknowledged. Online surveys can have a low response rate, especially in developed countries, and show increased participant fatigue (Hughes, 2012; Langdridge and Hagger-Johnson, 2009; Tourangeau, 2006). When using an online survey, representativeness of the participant group cannot be easily guaranteed, which could result in decreased external validity, and lack of control over the response situation can lead to undetected ambiguity, and, in turn, loss of researcher control (Czaja and Blair, 2004; Langdridge and Hagger-Johnson, 2009; Robson and McCartan, 2016). Potential lack of participant commitment, furthermore, can result in inconsistency in replying and incomplete, biased, or multiple submissions, and the data may be affected by the participants' memory or knowledge (Robson and McCartan, 2016; Langdridge and Hagger-Johnson, 2009).

These concerns were taken into consideration when choosing to use online surveys. On the contrary to literature discussed above, online surveys have shown higher response rates and more completed answers than other methods, and the effect of social desirability on online survey responses has been found to be small (Lygidakis et al., 2010; Russell et al., 2010; Shapka et al., 2016; Zhang et al., 2017). Survey 2 focused specifically on music listening, therefore, it is possible that an undue proportion of avid music listeners may have chosen to participate. As no direct contact was made with the survey participants, the data may include unduly positive accounts of music listening. In this instance, nevertheless, the Survey 2 data included both negative and positive responses regarding the effects of music listening. Furthermore, while the data collected could be seen as being from uninvolved respondents with perhaps questionable motivation, this mixed-methods design endeavoured to address this issue through the integration and triangulation between the three datasets.

The limitations discussed above were also addressed specifically through the research design. Surveys 1 and 2 were distributed through *Crowdflower* which supported increased researcher control. The platform allowed for confirmation of participants' characteristics, while also maintaining anonymity, and prevented multiple submissions.

While participants were self-chosen from the pool of *Crowdflower* users, the survey was only distributed to 3rd level[3] contributors, who have obtained this status due to their high-quality work in previous tasks, and those who claimed fluency in English, in an effort to collect high-quality data, and decrease ambiguity and false submissions. However, no other restrictions were placed regarding personal characteristics, to allow for a diverse participant group. Furthermore, the survey was distributed through all channels used by *Crowdflower*, independently of their content, since discriminating against certain channels, for example gambling websites, would exclude certain participants. Compensation was used to attract participants who were seeking to complete any task on the platform and not necessarily personally invested in the topic, in an effort to counter social desirability, increase response and commitment, and decrease drop-out rates (de Winter et al., 2015). All submissions were assessed before compensation, disqualifying a small number of submissions that were not appropriately completed, as discussed in Section 4.2.1.4 and Section 4.3.1.4.

Despite the concerns discussed above, the online surveys used in this research were highly effective and appropriate within the context of this study, due to their advantages regarding time and cost effectiveness, and wide reach, which were deemed as outweighing their possible limitations, allowing the exploration of specific topics while permitting wide dissemination (Brewer and Miller, 2003).

3.3.4 Online interviews

The final stage of this research comprised of 20 semi-structured interviews conducted online via *Skype*. This method was chosen to best address the research questions and reach a diverse international participant sample, as with Surveys 1 and 2. Furthermore, these interviews were seen as the best way to explore the participants' experiences of music listening and health and wellbeing, building upon and triangulating the quantitative data collected in Surveys 1 and 2, as qualitative research can access attitudes, behaviours, and issues of a sensitive nature (Willig, 2001). The qualitative aspect of this research contributed a unique perspective on music listening and health and wellbeing, through investigating listeners' lived experiences at a deeper level. The semi-structured interviews offered the listeners an opportunity to structure their own autobiographical narrative around a loose structure of pre-formed questions, while speaking openly and reflectively, using the interviews as a platform for rich conversation despite their one-off nature (Benwell and Stokoe, 2006; Bryman, 2008).

[3]Contributors are awarded performance badges by *CrowdFlower* in an effort to safeguard work quality and increase the contributors' engagement. For these badges they must continuously maintain a very high accuracy across a variety of different job types. 3rd level contributors have completed over 100 test questions across hundreds of different job types, and have a near perfect overall accuracy. Further information on this can be found on their website.

The interviews were conducted online via *Skype*, with participants recruited through *Prolific*. For qualitative research, the face-to-face interview is the "gold standard", but *Skype* is increasingly discussed as a viable, globally accessible, research method for conducting such interviews (Deakin and Wakefield, 2014). The online interviews used in this research were synchronous, providing an experience similar to face-to-face interaction. This allowed asking and answering of questions in real-time, and observation of non-verbal cues and facial expressions whilst researcher and respondent were both in their own spaces, and despite geographical distance, saving travel time and money (Deakin and Wakefield, 2014; Hanna, 2012; Seitz, 2016; Shapka et al., 2016; Sullivan, 2012). *Skype* was chosen as it is a free VoIP system which allows voice and video connection across the internet in real-time, and is used on a computer, smartphone or tablet, by 1.55 million users in 2019 (Koptyug, 2019; Lo Iacono et al., 2016; Seitz, 2016). In comparison to other interview methods, *Skype* interviews allow for a richer interaction than phone interviews, due to the added visual element, and can be easily recorded (Cater, 2011; Hanna, 2012; Seitz, 2016). Compared to in-person interviews, furthermore, research has suggested that interviewees may be more responsive, producing equally reliable, authentic and in-depth data (Deakin and Wakefield, 2014; Sullivan, 2012).

Online interviews have many advantages that were important for this research. They can overcome difficulties such as time and financial concerns, and geographical dispersion (Cater, 2011). Furthermore, online interviews can increase access to certain participants, allowing researchers to move away from convenience sampling (Sullivan, 2012). In this case, online interviews were an essential tool when studying music listening and health and wellbeing, a transcultural human phenomenon, thus needing access to individuals who have health restrictions, are potentially less physically mobile, or who may be socially isolated (Deakin and Wakefield, 2014; Lo Iacono et al., 2016). *Skype* interviews are less disruptive to schedules and can allow the participation of people who have time and place limitations, as they can choose where and when the interviews take place for their convenience (Hanna, 2012; Seitz, 2016; Shapka et al., 2016). The aim of this research was to recruit participants representing a range of positions in relation to the research focus and to gain insight into listeners' experiences, and this was only possible through reaching different kinds of listeners despite geographical boundaries.

Online interviews, furthermore, offer the participants an increased degree of control over the research process, establishing a more equal relationship with the researcher (Hanna, 2012), which was important due to discussing potentially sensitive topics, such as health difficulties and their impact on everyday life. Flexibility while retaining synchronicity was also essential in this case, as the participants were located in different time zones, with the interviews sometimes taking place late at night due to the time difference.

Via *Skype*, interviews can also take place in the participant's choice of environment, allowing them to feel more comfortable and less pressured, with neither the researcher nor the participant imposing on each other's personal space (Seitz, 2016). *Skype* creates a virtual private space, a neutral yet personal "safe location" (Hanna, 2012, p. 241) which can support comfort and safety for both (Deakin and Wakefield, 2014; Seitz, 2016). Among the current participants, for example, Rose had a phone job interview right before the research interview, Annie was putting her young baby to sleep, and Peter has limited mobility due to his chronic illness, and it was the online nature of the interviews that allowed them to participate while remaining in their own homes.

Despite the extensive benefits of *Skype* interviewing, and the growth of internet access, certain challenges remain. Sampling for online interviews is limited to those who have access to the software and the requirements regarding digital skills can limit the breadth of the participant pool (Deakin and Wakefield, 2014; Seitz, 2016). This, however, was not an issue, as the priority of this research was not the representativeness of the sample per se but its diversity. While it is significant to note that online interviews may attract different volunteers (Lo Iacono et al., 2016), this method was appropriate for the research aims. In regard to the interview process, using *Skype* meant that the observation of the participants' body language was restricted to the "head shot" nature of the webcam image, however, as the focus of this research was the in-depth exploration of the participants' experiences, this did not affect the data collection (Cater, 2011; Janghorban et al., 2014; Sullivan, 2012). Building rapport, an essential part of the interviewing process, may be challenging or problematic in online interviews, however, while establishing rapport in online interviews is different, this did not affect the quality of these conversations either (Cater, 2011; Deakin and Wakefield, 2014; Hewson, 2014; Shapka et al., 2016). In this case, I developed clear strategies to build rapport with the participants, prior and during the interview, as suggested by Hewson (2014). I focused on strengthening the research partnership gradually (Deakin and Wakefield, 2014); beginning with welcoming and appreciative communication when organising the interview, I clarified expectations and requirements and assured participants of their suitability. I then undertook the interviews with a warm demeanour, taking participants through more "light-hearted" questions, moving gradually to more personal and sensitive questions. I continuously listened intently, checking that they were comfortable with sharing sensitive information. Furthermore, at the end of all interviews, I asked participants how they found the interview experience, as suggested by Lo Iacono et al. (2016), with all participants responding positively and saying that they enjoyed the process and even found it beneficial.

Online interviews are also linked to concerns with regard to authenticity and self-presentation, namely whether participants are presenting an "authentic" self, being honest and reflecting on their responses (Snee, 2008; Sullivan, 2012). Sensitive ques-

tions are said to be challenging in online interviews due to the lack of personal connection, direct contact and intimacy, with *Skype* acting as an emotional barrier (Seitz, 2016). Participants who are less experienced in online communication, furthermore, may be less open about themselves during an online interview (Shapka et al., 2016). On the other hand, online interviews have been shown to be no less "authentic" than in-person interviews, as the accurate presentation of self is difficult to gauge in any environment (Garbett and Ovens, 2017; Snee, 2008; Sullivan, 2012). Indeed, my participants seemed comfortable with sharing highly personal and sensitive information during the interviews, especially towards the end of the process when rapport and trust had been established. The relative anonymity of online interactions and the lack of a shared social network seemed to allow the participants to better express their true selves (Janghorban et al., 2014). The participants seemed to be grateful to be able to tell their story online, this medium potentially allowing for more reflective responses to sensitive questions (Deakin and Wakefield, 2014; Smith-Stoner and Weber, 2000).

The potential limitations concerning online interviews are also linked to certain practical issues. While *Skype* and similar software are constantly improved and increasingly used by more people, technological glitches, audio quality, internet speed, familiarity with online communication, and digital skills may affect the interview process (Deakin and Wakefield, 2014). These factors could deter people who are less comfortable with technology from participating, such as older individuals (Sullivan, 2012). The technology involved, which must be relied upon during the interview, could lead to dropped calls, pauses, and inaudible segments. Therefore, as suggested by Seitz (2016), participants were asked beforehand to ensure that they have a stable internet connection and the latest version of *Skype*, and the full interview setup was extensively piloted. Another factor that can influence data collection is the interview environment; while participants may welcome being able to be in their chosen environment, an appropriate setting to hold the interview must be selected, similar to in-person interviews, as a disruptive environment could adversely affect concentration and the data collected (Deakin and Wakefield, 2014; Janghorban et al., 2014; Seitz, 2016). Inevitably, during this data collection there indeed were some technological and other glitches, as well as noises and distractions, however, they did not have a significant impact on the interview flow. The occurrence of pauses and repetitions in the online interviews was not different compared to face-to-face interviews (Deakin and Wakefield, 2014). Inaudible moments were clarified with subsequent questions, and were explicitly noted in the transcripts for transparency. When calls disconnected, the interview continued after a few minutes. Due to the gradually built rapport, the interruptions did not seem to faze the participants, who were comfortable repeating themselves and resuming the conversation. Technical difficulties meant that there were moments when I was forced to use audio alone, but those moments were few and the audio quality was sufficient to

support the interview process effectively.

In conclusion, following extensive planning and piloting, *Skype* interviews prove to be highly effective in addressing the research questions and aims. This method was used not as an easier option, but an opportunity to talk to otherwise inaccessible participants and keep a transcultural focus during the interview stage of the data collection (Deakin and Wakefield, 2014; Lo Iacono et al., 2016). My expectations were no different from face-to-face interviews, and the advantages of this method were seen as outweighing the limitations in the context of this research.

3.4 Ethical and other considerations

3.4.1 Ethics

This research fully complies with the British Psychological Society *Code of Human Research Ethics* and the *Ethics Guidelines for Internet-mediated Research*, with reference to the main principles of i) respect for the autonomy, privacy, and integrity of individuals, ii) scientific integrity, iii) social responsibility and iv) minimising harm, and meets the legal requirements for processing data in the UK and the General Data Protection Regulations (British Psychological Society, 2014; University of Edinburgh, 2019; British Psychological Society, 2017). Potential ethical concerns have been considered throughout the research lifecycle, aiming to maximise the benefit of the research and minimise harm to participants (Economic Social Research Council, 2015). All three stages of data collection were approved by the University of Edinburgh College of Art Ethics Committee, deemed as low risk, as the participants were all adults, and there was no risk of harm. The ethical issues relevant to this research concern participant consent, anonymity and confidentiality, and data management. An example of the ethics approval application submitted and approved for each stage of this research can be found in Appendix A.

The participants in the three independent samples were adults over 18 years old, which was reinforced by the crowdsourcing platforms used, as registration is prohibited for minors. The three stages of data collection required informed consent, and detailed and accessible information sheets were provided to the participants (British Psychological Society, 2017; Robson and McCartan, 2016), seen in Appendix B, Appendix C and Appendix D. The consent forms for Surveys 1 and 2 were embedded within the online platform, while the consent forms for the interview participants were provided through the short survey completed beforehand. The consent forms and information sheets informed the participants of their right to withdraw at any time, advised on the time required for completion, and included information on the background, pur-

pose, and focus of this research (British Psychological Society, 2014; Economic Social Research Council, 2010). Furthermore, the contact details of the researcher and the research supervisors were available both at the beginning and end of the data collection process. Standard ethical procedures were followed in the *Skype* interviews, equivalent to face-to-face interviews (Sullivan, 2012). Informed consent was obtained beforehand through the short online pre-interview survey, in which participants also agreed to be audio and video recorded (Janghorban et al., 2014). Oral consent was also obtained and recorded at the beginning of each interview. The online nature of the interview allowed participants to easily withdraw at any time by disconnecting from the interview process. While this ease of withdrawal could lead to a higher number of absentees and rescheduling (Janghorban et al., 2014), there were no absentees in this study, and only one participant required rescheduling due to bereavement. Given the focus of this research, there was no need for a specific debriefing process, as it was not anticipated to cause any physical or mental stress, nor violate personal privacy (Robson and McCartan, 2016).

Anonymity and confidentiality were guaranteed to all survey participants, as no information provided was identifiable. This was further supported through the use of crowdsourcing platforms, as personal details were safeguarded, not allowing direct communication with the contributors (Lavrakas, 2008). Certain information was collected through the surveys, for example contributor IDs for the compensation process, however, all details were removed from the main body of data and stored securely until the completion of this research. The interview participants were allowed to use their real name or a pseudonym. In the case of those using their real names, the data is not anonymous, however, no other identifying information is discussed in this thesis, and this was the participants' informed choice. The crowdsourcing platform used for the interviews safeguarded participants' personal details and no further contact details were obtained apart from the participants' *Skype* username, which could be created solely for the purpose of the research and deactivated moments later (Deakin and Wakefield, 2014). Participants' *Skype* usernames were obtained through the short pre-interview survey and deleted after the interview was completed, retaining no personal contacts for the participants. As when using any software, participants were encouraged to read the *Skype* terms and conditions[4] beforehand (Sullivan, 2012).

In regard to data management and storage, two of the three surveys (Survey 2 and the pre-interview survey) were designed on *SurveyMonkey* according to their terms of use[5]. The data collected through the surveys was stored during the data collection and analysis process on the *SurveyMonkey* database, which conforms with standard

[4] *Skype* terms and conditions can be found on their website.

[5] The *SurveyMonkey* terms of use can be found on their website.

data management regulations. Following this, all survey data was deleted from *SurveyMonkey* and stored in a password protected and encoded document in the University of Edinburgh Cloud data storage system, to ensure easy access for the research team and safekeeping. All the interview data (audio and video recordings, and transcripts) were stored securely in the University of Edinburgh Cloud data storage as well until the completion of this research.

3.4.2 Language

A further aspect of this research design that should be addressed is the use of the English language when conducting research with an international population. While the participant sample in this research spanned a wide range of nationalities, the research tools were designed in English and not translated into further languages. As the research took place online and through crowdsourcing platforms, a relatively high level of English language knowledge can be assumed. Only participants who claimed English proficiency were recruited for all three data collection stages. Furthermore, all completed entries were assessed after completion to ensure that all data included in the analysis was collected from participants with a high-level understanding of the questions.

Deciding on the language or languages in which the research tools will be designed or not is inherently inclusive/exclusive; the use of the English language in this research, will have excluded certain populations. However, as the study did not focus on any nationality specifically, the translation of the research tools into further languages was not seen as essential. Unless translations were undertaken into all languages internationally, some participants would still have been excluded, as they could have potentially come from any nationality that has online access. Furthermore, translation would have led to further practical difficulties, such as distributing the appropriate survey to each participant, and possibly added ambiguity, especially when addressing psychological constructs such as wellbeing. Further translation would also be required when undertaking the interviews and analysing the qualitative data. The use of the English language is seen as a limitation in this research, however, there were no relevant comments in the participants' feedback, and there were very few instances in which the participants lacked understanding of the questions due to the language used, suggesting that the use of the English language in this research did not significantly affect the quality of the data collected.

3.4.3 Researcher perspective

All qualitative research, whether part of mixed-methods research or stand-alone, requires an explicit discussion of the researcher perspective to support the validity and credibility of the study (Lacey and Luff, 2007). The researcher's preconceptions, assumptions, and views play a role in the analysis and its outcomes, and therefore should be acknowledged and visible (Lacey and Luff, 2007). This was clear in my priorities from the beginning of this study; Survey 2 included extensive open-ended questions in order to allow participants to contribute their own views and perceptions, moving away from the pre-set questions which may have been influenced by my perspective. The interview protocol was semi-structured, to allow for the participants to highlight the issues that are important to them, moving away from questions that were preconceived by myself. Furthermore, I made extensive effort to discuss each issue brought up during the interviews, asking specifically about potential positive and negative aspects, in order to support a balanced view and holistic understanding. During the analysis, in order to support understanding of each participant's perspective, the stage of familiarisation and immersion in the data, as described in Section 6.2.3, was extensive and took place from right after the interviews until the completion of the analysis process. Each analysis stage, furthermore, was discussed extensively with the supervisory team, including the coding of the data, the emerging themes and their descriptions, as a process of peer-review. Throughout the analysis of the qualitative data, and the integration between qualitative and quantitative data, I acknowledged my own preconceptions and set them aside in order to interpret the data openly. My analysis is, however, a unique interpretation of music listening and health and wellbeing in the participants' lives, aiming to offer deeper understanding of the topic and provoke further reflection on the role of music listening in our everyday lives.

3.4.4 Research or therapy

A rather surprising consideration that arose both in Survey 2 data and the interviews was the potential beneficial nature of this research for the participants, which emerged in their feedback and comments. It is possible that participants benefited from this research experience, as there are some similarities between qualitative research on sensitive issues and counselling, even when participants are simply offered to share their opinions and experiences through open-ended survey questions, with no comment from the researcher. Participants opened up about positive or negative experiences in their lives, described how they use music listening, and sometimes reflected on and discussed sensitive issues and traumatic events. While in no way was this research designed as a therapeutic intervention, Oakland (2010) highlighted the similarities between research and counselling interviews, as both use open-ended questions to encourage the in-depth

exploration of issues, and argues that talking can also be considered a therapeutic intervention for the speaker in its own right.

When sensitive topics are discussed during interviews, the researcher often employs skills that are similar to those used in counselling, in order to advance the research purpose. This, however, also requires potentially helping the participant come to terms with difficult situations, as it would be unethical to unearth painful memories and leave the participant in distress (Coyle and Wright, 1994). This was indeed the case during some of the interviews discussed in this thesis; participants often reflected on significant health difficulties, near-death experiences or traumatic events. When becoming aware of distress in my participants, I responded with acceptance and empathy, but always asked if they would like to continue with the line of inquiry or stop before questioning further. At the completion of the interview I made sure to check how they were feeling and encourage them to seek appropriate help if needed. This was far from one-sided, however. Conducting interviews on this topic, or any topic it could be argued, the researcher may have to listen to and, inadvertently, reflect on in-depth descriptions of trauma and pain, while the confidential nature of research prohibits discussion beyond the interview. Due to my experience in this research, I must agree that research may be inadvertently beneficial and therapeutic (Coyle and Wright, 1994; Fontana and Frey, 1994; Oakland, 2010). On the other hand, I wish to highlight that this may also entail risk for both participants and researchers, and should be more explicitly addressed in research methodology literature and researcher training.

3.4.5 Compensation

Compensation was used in all data collection stages administered through the crowdsourcing platforms with slight differences between the three studies. Compensation is required when using crowdsourcing, and in this case, it was also used as an incentive to encourage response, increase engagement, and commitment, and decrease social desirability and drop-out rates. Compensation also aimed to attract participants who may not be personally invested in the topic but willing to take part to receive some tangible benefit and therefore increase the diversity of the participant sample.

Great effort was made to minimise the time and commitment required of the respondents, and clear explanation of the compensation process was given to the participants beforehand in the task guidelines, the survey descriptions, and in the participant information sheets. Compensation for all three data collection stages was calculated according to fair pay amounts and complied with the U.S. fair pay amount of $9 per hour (£6.20 at the time of calculation). Survey 1 required minimum 2[6] minutes for com-

[6]The time required to complete Surveys 1 and 2 was calculated using the point system recommended

pletion, and the contributors received compensation appropriate for three minutes of work (£0.31), which came up to £0.372 per survey including the *Crowdflower* fees (20% of the transaction). Contributors were paid $0.1 on completion, and were then given a bonus of $0.44 after the test question confirmed the accuracy of their responses. In the six cases that the answers did not match the submissions were disqualified. The overall cost of the Survey 1 data collection (392 responses) through *Crowdflower* amounted to approximately £150.

Survey 2 compensation (215 responses) was calculated and managed similarly. This second survey required 20 minutes and the participants received $2.50, $0.01 automatically at the time of completion and $2.49 once their answers were assessed; this involved correctly supplying a code that was available at the end of the survey and providing genuine and comprehensible answers. The initial budget for Survey 2 was £500. However, *Crowdflower* distributed the survey to a large number of contributors, many of whom undertook the survey simultaneously. Due to the survey's relatively high time-commitment, *SurveyMonkey* collected more submissions than intended, resulting in a slightly higher cost than planned, as well as a larger body of data than anticipated. In regard to the interviews, participants were awarded £10 after the interview (all 20 interviews lasted under two hours each), amounting to £200 overall.

Overall the process of compensation in the context of this research was straightforward, and managing this through the established procedures of the crowdsourcing platforms was highly convenient.

3.5 Research design and process

This research explored the relationship between music listening and health and well-being in the lives of the international general population. As most relevant research on this topic has taken place in the laboratory, the current methodological choices addressed the shortage of naturalistic empirical research in this field (Västfjäll et al., 2012). Aiming towards increased ecological validity, e-research allowed the data collection to take place within the participants' natural environments. This research also addressed the lack of cross-cultural research on the topic, recruiting participants independently of location, through the effective use of online research tools (Robson and McCartan, 2016). As discussed in Section 2.5, the purpose of this research was to explore music listening and health and wellbeing in everyday life, asking:

1. For which listeners, when, how, and why does music listening enhance health and wellbeing within the general population?

by Versta research, as found on their website.

2. For whom, when, how, and why is music listening seen as unhelpful by listeners in the general population?

To best explore these questions, this research adopted a mixed-methods approach and three stage research design. Participant recruitment for all stages took place through crowdsourcing and data was collected through online surveys and interviews. Surveys 1 and 2 used a quantitative approach, employing a large participant sample. Survey 1 investigated music listening in the context of other popular leisure activities, and Survey 2 was an in-depth exploration of music listening behaviours and their relationship with health and wellbeing. Survey 2 also included a qualitative aspect, using open-ended questions to discover further important factors which were then explored in the interviews. These quantitative stages aimed to gain insight into wider trends and tendencies but without claiming causation. The interviews, on the other hand, focused on meaning and the individual experiences of listeners. Using a small participant sample, they explored how listeners reported using music listening in their everyday life and how they perceive its relationship to their health and wellbeing. The interview findings also enabled reflection on the Surveys 1 and 2 findings in more depth for profoundisation and triangulation purposes.

Table 3.1 outlines the three data collection stages, their methodological approach, the data collection tools and distribution platforms used, their objectives, and participant sample. The three data collection stages are discussed further in the next sections, in regard to their design and content, data collection and analysis processes, and their participant samples.

3.6 Summary

This chapter introduced the methodological and philosophical approach of this research. It discussed the chosen research tools, e-research, crowdsourcing, online surveys, and online interviews, outlining their benefits and limitations, and highlighting why they were selected for this research. Ethical and other considerations were discussed, explaining how they influenced this research. All methodological aspects described in this chapter were purposefully selected for this research as appropriate to best answer the research questions within the intended population. Mixed methodology allowed to answer the research questions in a holistic way, regarding wider trends and statistical associations, and the individual lived experience of listeners. Crowdsourcing supported the recruitment of participants from a highly diverse, and in the case of the interviews specifically targeted, sample of the international general population, able to participate due to the e-research form of this study. The three-stage design allowed for each stage to inform the design of the subsequent research tool, supporting the introduction

Table 3.1: The three data collection stages.

Survey 1	
Approach	Quantitative
Tool	Brief online survey
Distribution	*CrowdFlower*
Sample	392
Time-scale	26-27 May 2016
Aims	Collect data from large and diverse international sample. Explore music listening in the context of other leisure activities, and health and wellbeing. Focus on statistical associations.
Survey 2	
Approach	Quantitative
Tool	Extended online survey
Distribution	*CrowdFlower*
Sample	215
Time-scale	24 February 2017
Aims	Collect experiences of music listening for wellbeing. Focus on statistical associations and their interpretation through qualitative data. Triangulate with Survey 1 findings.
Interviews	
Approach	Qualitative
Tool	Interviews via *Skype*
Distribution	*Prolific*
Sample	20
Time-scale	20-30 July 2017
Aims	Collect in-depth data from small diverse international sample. Obtain insight into the lived experience, perception and communication of the relationship between music listening and health and wellbeing. Triangulate and enrich Survey 1 and Survey 2 findings.

and in-depth investigation of emerging themes. Overall, this chapter has demonstrated that the richness of this data could not have been gathered through utilising another methodology.

Now that the methodology and process of this research has been presented, the following chapters outline the design, data collection, and analysis processes undertaken for Surveys 1 and 2 and the interviews, and present the participants and the main findings.

Chapter 4

The surveys

4.1 Introduction

This chapter discusses the design, data analysis, and data collection processes for Surveys 1 and 2 and presents their participants and main findings.

4.2 Survey 1: Leisure activities and health and wellbeing

Survey 1 explored the relationship between music listening and health and wellbeing, alongside other popular leisure activities, in a large, diverse, international sample. It focused on broad trends and associations between variables, and facilitated an investigation of music listening in the context of leisure activities. Not focusing explicitly on music listening, this survey also aimed to avoid response bias, attracting participants independently of their interest or not in music listening. Furthermore, Survey 1 was an innovative application of crowdsourcing for quantitative data collection in the field of Music Psychology, confirming the method's appropriateness and effectiveness.

4.2.1 Methods

4.2.1.1 Survey design and content

Survey 1 was a brief 2-minute survey, seen in Appendix E. It was comprised of 13 multiple-choice questions, as well as a statement of consent and a test question to measure participants' comprehension and focus. Basic demographics were requested (age, gender, nationality) and health and wellbeing were reported through two estab-

lished single-item scales, one on subjective physical health and one on life satisfaction[1], which were reliable peer-reviewed measures tested on a variety of populations. Finally, the participants were asked about the frequency and duration in which they engage with four popular leisure activities in their free time, with the phrasing of the questions following that used previously in large-scale research: watching TV/movies, reading books/newspapers/online, listening to music, and doing sport and exercise. The specific activities were selected based on UK and USA statistics on popular leisure activities (Bureau of Labor Statistics, 2015; Office of National Statistics, 2012).

Survey 1 was piloted by University of Edinburgh colleagues to increase usability, understanding, and face validity. Feedback was also sought from the research supervisors regarding clarity, appropriateness, ease of completion, and content validity. Once finalised, Survey 1 was created as a task on the *CrowdFlower* built-in survey service, presented in an aesthetically appealing and simple format, supported by the platform's clear layout.

4.2.1.2 Data collection

Survey 1 was distributed through *CrowdFlower*, collecting 392 responses internationally. The survey was launched on May 26$^{\text{th}}$ 2016 at 7:00 pm, and the data collection was completed on May 27$^{\text{th}}$ 2016, at 8:35 am, just above 12 hours later. No direct contact with the contributors took place, as the survey was distributed through the platform, and all instructions and relevant information were included in the survey itself and the attached participant information sheet. Survey 1 did not require high-level commitment from participants, however, the need for honest responses was highlighted in the survey instructions and participant information sheet. Furthermore, the collection of feedback from over $\frac{1}{4}$ of the participant sample, suggests a high degree of engagement and reflection.

4.2.1.3 Data analysis

Following the Survey 1 high-speed data collection, the dataset was analysed using *IBM SPSS V22* statistical software. Using an exploratory approach rather than being hypothesis-driven, the data analysis focused on descriptive statistics and associations between variables through correlation and cross-tabulation tests. This chapter includes the Survey 1 findings that were statistically significant and were seen as relevant to the research questions presented in Section 2.5.

[1] While health and wellbeing are discussed as one construct in this thesis, measures tend to focus either on physical health or one's sense of wellbeing, therefore, they were addressed separately in Survey 1, and the resulting statistical associations are also presented separately. Health and wellbeing, however, are brought back together and approached holistically when taking the statistical findings forward, moving into their discussion and significance.

4.2.1.4 The participants

Survey 1 was completed by 392 participants[2]. Most were male (65%), with a high percentage of female participants as well (35%). There was a wide age range; most were young adults (37% 25-34 years old, 31% 35-44 years old), with a smaller number of younger and older participants, and only five participants over 65 years old. Participants were also diverse in regard to nationality, with 54 nationalities represented. Most prevalent nationalities in the Survey 1 sample were Russian (12%), Indian (9%), Venezuelan (9%), and Serbian (6%)($N = 392$).

In regard to health and wellbeing, most participants were moderately positive or neutral regarding their life satisfaction and subjective health, as seen in Fig. 4.1 and Fig. 4.2. Older participants were more likely to report poorer health (small negative correlation, $r(390) = -0.182$, $p < 0.001$), but life satisfaction was independent of demographic characteristics, suggesting the influence of other factors beyond those in Survey 1. Life satisfaction and subjective health were statistically associated (medium positive correlation, $r(390) = 0.382$, $p < 0.001$) as expected, supporting the validity of the measures used and the approach adopted in this research, exploring health and wellbeing as a whole comprised of different aspects.

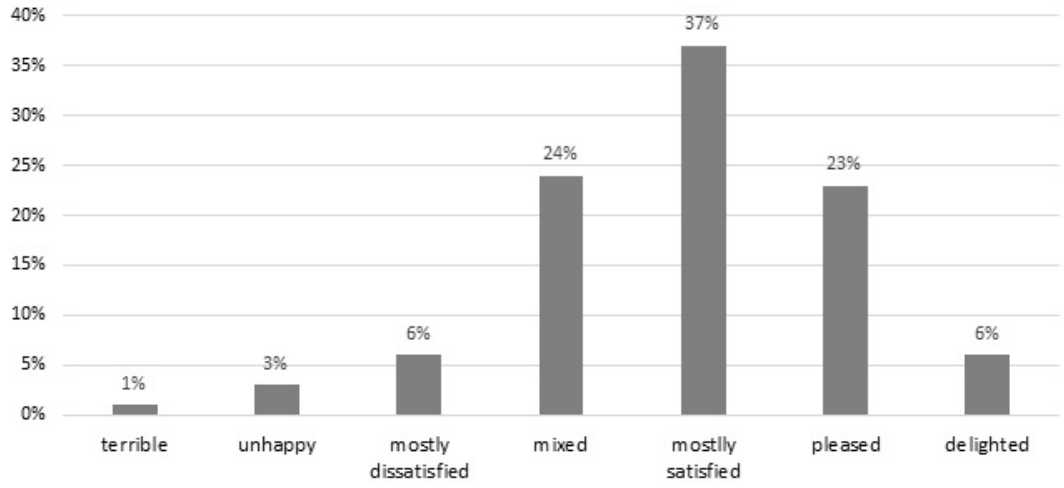

Figure 4.1: Survey 1 - Reported life satisfaction.

[2]400 replies were submitted. One was the researcher's reply during the pilot, one participant did not provide consent and six answered the test question incorrectly so their data were disqualified.

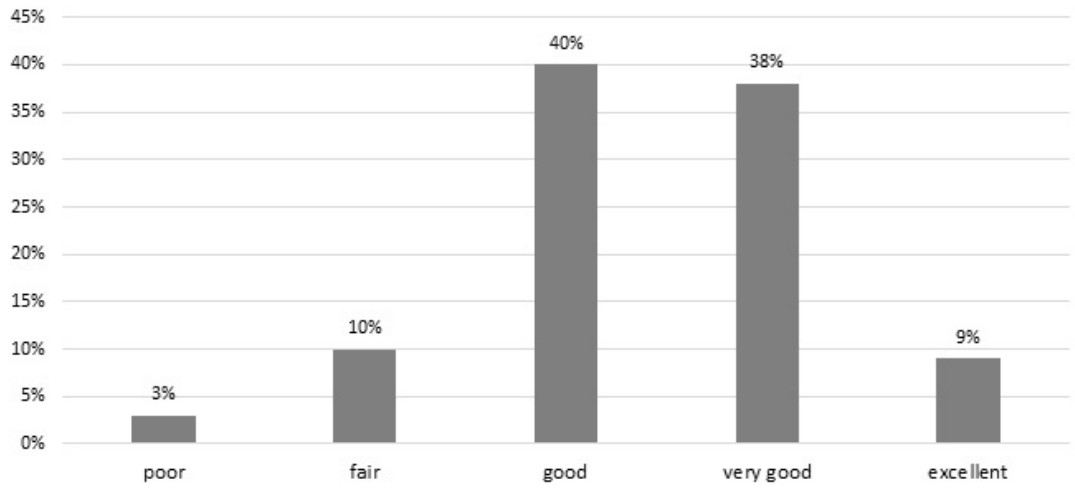

Figure 4.2: Survey 1 - Reported subjective health.

4.2.2 Main findings: What is the relationship between leisure activities and health and wellbeing?

Survey 1 confirmed that music listening is an important part of people's lives and has a significant role among leisure activities due to its relationship with health and wellbeing. Music listening was highly prevalent in people's lives and significantly associated with life satisfaction, unlike reading or watching TV and movies, despite not being the most frequent leisure activity, as seen in Fig. 4.3; in their free time participants read and watch TV and movies more frequently than listening to music. Furthermore, music listening lasted less than other activities, such as watching TV and movies. Despite this, participants who listened to music more frequently and for longer were more likely to report higher life satisfaction, frequency $\chi^2\,(30, N = 392) = 74.271$, $p < 0.001$, duration $\chi^2\,(24, N = 392) = 49.648$, $p = 0.002$. Music listening was also linked to health, though indirectly; participants who listened to music more often were likely to exercise more often (small positive correlation, $r(390) = 0.164$, $p = 0.001$), and in turn more likely to report better health (small positive correlation, $r(390) = 0.198$, $p < 0.001$).

Music listening and health and wellbeing were largely independent from basic demographic characteristics, suggesting the importance of other influencing factors beyond those in Survey 1, such as specific ways of listening to music potentially. Female participants listened to music for longer durations overall (small positive correlation, $r(390) = 0.352$, $p = 0.003$), however, music listening frequency and duration were linked, independently of age or nationality, pointing towards the existence of particular distinct listening patterns independent of basic demographics; participants seemed to either be more engaged listeners, listening to music frequently and for longer, or less

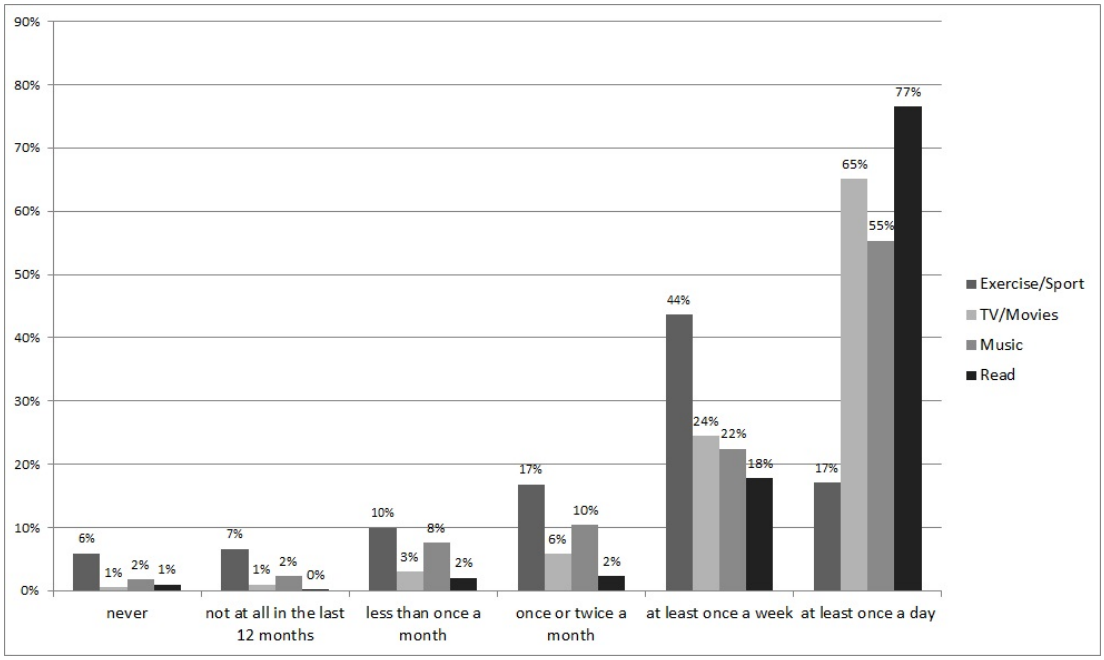

Figure 4.3: Survey 1 - Reported leisure activity frequency.

engaged.

This relationship between music listening, life satisfaction, and health, despite music listening not being the most prevalent or time-consuming leisure activity of those included in the survey, suggests that music listening has an important role for health and wellbeing unlike other activities, potentially used differently and fulfilling the listener's needs more quickly, or with a clear endpoint. Furthermore, the both direct and indirect nature of the association between music listening and health and wellbeing aspects, and its independence from demographic characteristics, indicates a complex relationship with other influencing factors at play.

4.2.2.1 Summary

Survey 1 explored music listening and health and wellbeing in the context of popular leisure activities, confirming the prevalence of music listening in the everyday life of an international general population. The findings suggest that music listening has an important relationship with health and wellbeing, as, unlike reading or watching TV, listening to music frequently and for longer was linked to higher life satisfaction, and indirectly associated with higher health. This relationship seems to be independent from demographic characteristics, with listeners nonetheless presenting different music listening patterns. These findings, furthermore, suggest that the link between music listening and health and wellbeing aspects may be direct or mediated, highlighting the complexity of this relationship and the potential importance of other influencing

factors, further investigated in Survey 2. Music listening is comprised of multiple behaviours that are developed and influenced by the listeners' identities and lives, and associated with the participants' health and wellbeing. These findings highlight the need to investigate specific music listening behaviours and health and wellbeing aspects in further detail through Survey 2. Finally, Survey 1 confirmed the effectiveness of crowdsourcing for data collection in Music Psychology survey research.

4.3 Survey 2: Music listening and health and wellbeing

Survey 2 was an in-depth exploration of music listening behaviours and health and wellbeing aspects in a large, diverse and international sample. It collected quantitative data focusing on statistical relationships, and qualitative data on the positive and negative influence of music listening, and its purposeful use for wellbeing.

4.3.1 Methods

4.3.1.1 Survey design and content

Survey 2 was an extended 20-minute survey. This survey focused on specific music listening behaviours, health and wellbeing aspects, and their associations. It comprised 42 questions, both closed (multiple choice or Likert scale) and open-ended, some of which were optional. It also included a statement of consent and there was a detailed information sheet attached. The main topics that Survey 2 investigated, as seen in Appendix C, were:

- Demographics (age, gender, nationality, education),
- Health and wellbeing (mindfulness, quality of life, subjective health, life enjoyment, life meaningfulness, negative feelings, physical and mental health challenges, influencing factors)[3],
- Music experience (music education, music making through playing instruments or singing),
- Music listening in everyday life (music listening reasons, choice factors, mediums, contexts, frequency and duration, change, importance of music in life),
- The relationship between music listening and health and wellbeing (positive and

[3]Health and wellbeing are again measured through different aspects. The resulting statistical associations are presented separately, however, health and wellbeing are approached as a whole when discussing the overall findings and their meaning. Health difficulties are at times discussed distinctly as an influencing factor, but this is made explicit.

negative influence, how and why music can help or not, music listening for wellbeing practices).

Following an extensive review of relevant existing tools, the survey was designed using established peer-reviewed questions and measures, as well as adapted and new questions. Certain peer-reviewed questions were adapted to better suit the target population and survey topic, as well as for enhanced clarity. The survey questions created for the purposes of this research were phrased in a clear, simple manner, in order to support ease of understanding given that many respondents would not be native English speakers, and great effort was made to avoid leading or ambiguous questions and increase usability. All questions were neutrally phrased and self-explanatory, aiming to elicit rich and relevant responses, while there were a number of open-ended questions which were not compulsory, allowing for different levels of participant commitment. Gender and sexuality were measured through an open-ended question, chosen purposefully to allow different definitions and experiences of gender.

The health and wellbeing section was comprised of self-report measures, and, being complex and situated constructs, were measured through a number of questions on:

- quality of life,
- subjective health,
- life meaningfulness,
- life satisfaction,
- the presence/absence of negative feelings,
- physical and mental health challenges,
- specific diagnoses,
- positive and negative influences on health and wellbeing, and
- mindfulness.

Information on physical and mental health challenges, and specific diagnoses, was provided through open-ended questions.

Mindfulness was also measured, as it is associated with health and wellbeing. High mindfulness, namely "awareness that emerges through paying attention on purpose, in the present moment and non-judgementally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145), is associated with reduced stress levels and enhanced emotional wellbeing, and negatively correlated with depression, insomnia, anxiety, anhedonia, and worry (de Bruin et al., 2012; Goldberg, 2014; Lynch and Wilson, 2018). Mindfulness is also seen as a set of skills that can be learned to reduce psy-

chological symptoms and increase health and wellbeing through better self-regulation, compassion and self-acceptance (Baer et al., 2006; Brown and Ryan, 2003; Carson and Langer, 2006; Gilbert and Procter, 2006). The Survey 2 mindfulness questions[4] focused on five facets of mindfulness from the *Five Facets of Mindfulness questionnaire (FFMQ)* (Baer et al., 2006): observing, describing, acting with awareness, non-judgement, and non-reaction.

Survey 2 was piloted both in paper and online to enhance accessibility, clarity and face validity, to ensure the appropriateness of the survey questions, and finalise the survey structure and layout. The 15 pilot participants, drawn from the researcher's network, were from 11 nationalities, had diverse educational and professional backgrounds, and different English language levels. They provided extensive feedback regarding the questions and the survey appearance, which resulted in several iterations of the survey. Once finalised, it was designed on *SurveyMonkey* and created as a *CrowdFlower* task. The survey was presented in an aesthetically appealing and simple format, using subtle background graphics and colour, and clear fonts.

4.3.1.2 Data collection

Survey 2 was distributed through *CrowdFlower*, obtaining 215 responses. The task on *CrowdFlower* was set up using a simple template, including the task guidelines, the *SurveyMonkey* link, and a field for the participants to fill in the code provided at the end of the survey, to confirm they had indeed completed the survey. The survey was launched on 24/2/17 01:00, and the data collection was completed 24/2/17 09:30, just eight hours later, as shown in Fig. 4.4. During these hours, contributors from 46 nationalities completed the survey.

Survey 2 required a reasonable time commitment from participants in order to answer the questions appropriately and qualify for compensation, as explicitly described in the guidelines. Participants were expected to reflect upon their experiences and if needed seek out specific information, such as diagnosis details. Participants demonstrated high engagement with the survey, as shown by the large number of, often extensive, replies to the optional questions and further comments.

[4]The mindfulness questions included in Survey 2 were taken from the *Five Facets of Mindfulness questionnaire (FFMQ)* and the *FFMQ short form (FFMQ-SF)* (Baer et al., 2006; Bohlmeijer et al., 2011). The five facets of mindfulness are i) observing: noticing internal and external stimuli, ii) describing: noting or mentally identifying internal experiences with words, iii) acting with awareness: focusing on one's current activities, iv) non-judgement of inner-experience: evaluating one's sensations, cognitions, and emotions without judgement, and v) non-reaction to inner experience: allowing thoughts and feelings to come and go without being absorbed in them.

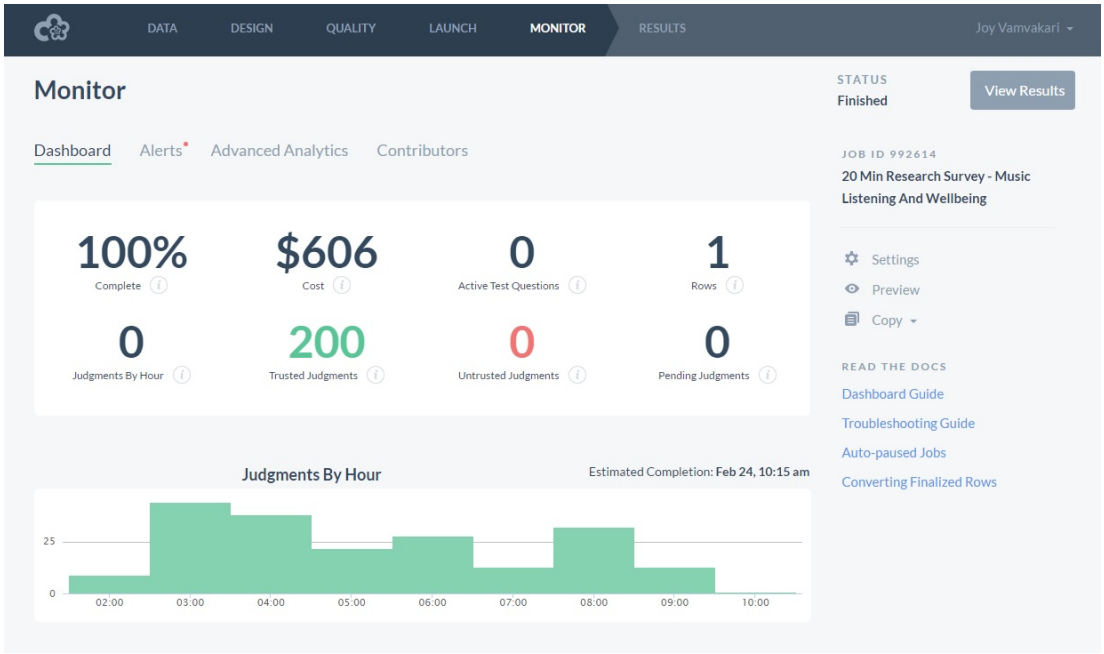

Figure 4.4: Survey 2 - The *CrowdFlower* dashboard showing the data collection process.

4.3.1.3 Data analysis

Following the data collection described above, all data was analysed using *IBM SPSS V22* statistical software and *QSR NVivo* qualitative analysis software. A separate process of analysis was undertaken for the analysis of the quantitative and qualitative data, with data integration, comparison and interpretation taking place after the separate analyses were completed.

The quantitative data were analysed using an exploratory approach rather than being hypothesis-driven, through descriptive statistics and focusing on associations between variables. Most variables were measured using Likert scales, therefore Chi square or Spearman's rank order correlation tests were seen as most appropriate. Furthermore, the Survey 2 responses were interpreted in two ways; survey responses tend to be analysed in terms of categorising participants, however, I chose to also interpret the responses and resulting statistical associations as reflecting the participants at that moment in time, rather than statically, allowing for a different interpretation of the data. It is important to note that this thesis includes the Survey 2 quantitative findings that were both statistically significant, with p values under 0.008 and less than 0.005 in most cases, as well as relevant to the research questions presented in Section 2.5. Potential associations between variables that were found to not be statistically significant, or were seen as not immediately relevant to addressing the research questions, are not presented in this thesis, for ease of understanding and due to word count restrictions.

The Survey 2 qualitative data was thematically analysed using *QSR Nvivo 11* software;

I initially obtained familiarity with the whole body of data, and subsequently identified and coded the emerging themes. Thematic analysis was chosen as an efficient and appropriate analysis method, seen as ideal for descriptive or exploratory purposes (Braun and Clarke, 2006).

4.3.1.4 The participants

Survey 2 was completed[5] by 215 participants. The participant sample was highly diverse in regard to age, gender, and sexuality, as seen in Table 4.1, with most participants being male and young adults.

Table 4.1: Survey 2 - Age, gender, and sexuality.

Age	Percentage of participants
18-24 years old	25%
25-34 years old	38%
35-44 years old	23%
45-54 years old	10%
55-64 years old	4%
Gender	**Percentage of participants**
Male	69%
Female	30%
Non-binary	1%
Sexuality	**Percentage of participants**
Heterosexual	24%
Homosexual	2%
Bisexual	1%
Asexual	1%
Pansexual	1%
Did not disclose	71%

The survey was distributed internationally, with participants from 46 nationalities[6]. A larger number of participants were from Venezuela (22%), Brazil (11%), Serbia (8%), India (7%), and Russia (7%)($N = 215$).

Participants also had a diverse educational background. Most held a higher education degree (69%), either undergraduate (41%) or postgraduate (28%). 13% of the participants had undertaken technical, practical or vocational education. 16% of the

[5]Data from 215 participants were analysed for the Survey 2 results. 213 participants completed the survey fully, and two participants completed more than 70% of the questions so their answers were included in the analysis. For participants who completed less than 70% of the questions, their data were disqualified.

[6]One participant (0.5%) was bi-cultural ($N = 215$).

participants had left education after secondary school, and 1% after primary school, with one participant reporting that they had not accessed education at all. Most did not attend music education, though sang in their free time ($N = 215$).

Health and wellbeing was measured through a range of different aspects, which contribute to the participants' overall health and wellbeing. Most participants were moderately positive or neutral about their quality of life, health, life enjoyment, and life meaningfulness, as seen in Fig. 4.5, similarly to Survey 1. However, most participants (92%) had experienced negative feelings, and over $\frac{1}{3}$ of the participants faced physical and mental health challenges in their everyday lives with varying impact. For 18% negative feelings were present on most days or every day, being a significant influencing factor on their wellbeing ($N = 215$). Experiencing negative feelings frequently was linked to lower health and wellbeing measures as expected, through quality of life (small negative correlation, $r(213) = -0.269$, $p < 0.001$), health (medium negative correlation, $r(213) = -0.360$, $p < 0.001$), life enjoyment (medium negative correlation, $r(213) = -0.301$, $p < 0.001$) and life meaningfulness (medium negative correlation, $r(213) = -0.321$, $p < 0.001$).

Furthermore, 34% of the participants face a wide range of physical and mental health challenges, seen in Appendix F, and some participants' daily lives were significantly affected by multiple conditions. 20% faced physical health difficulties, and 20% had mental health difficulties, 2% discussing other difficulties, such as Autism Spectrum Conditions. Some participants faced both physical and mental health difficulties (7%), congenital health difficulties (2%), or had chronic difficulties (8%)($N = 215$).

Health difficulties were statistically associated with age and gender. A higher percentage of young and female participants reported facing mental health challenges[7]. Furthermore, physical health difficulties were more prevalent in older age, as also found in Survey 1. Health difficulties were statistically linked to reported health and life enjoyment, but not quality of life or life meaningfulness. Therefore, while facing health difficulties seemed to influence participants' reported wellbeing, some participants who have health difficulties may, nonetheless, report high quality of life and find their life very meaningful.

Mindfulness measures were also linked to health and wellbeing, as high awareness of one's needs and how to fulfil them effectively may be linked to feeling well. Higher wellbeing was linked to higher overall mindfulness and to four of the five mindfulness facets. Participants with higher overall mindfulness, Action Awareness, Observation, and Description reported higher quality of life, health, life enjoyment, and life mean-

[7] 23% of female compared to 18% of male participants face mental health challenges. 19% mental health compared to 9% physical health difficulties in 18-24 year olds ($N = 215$).

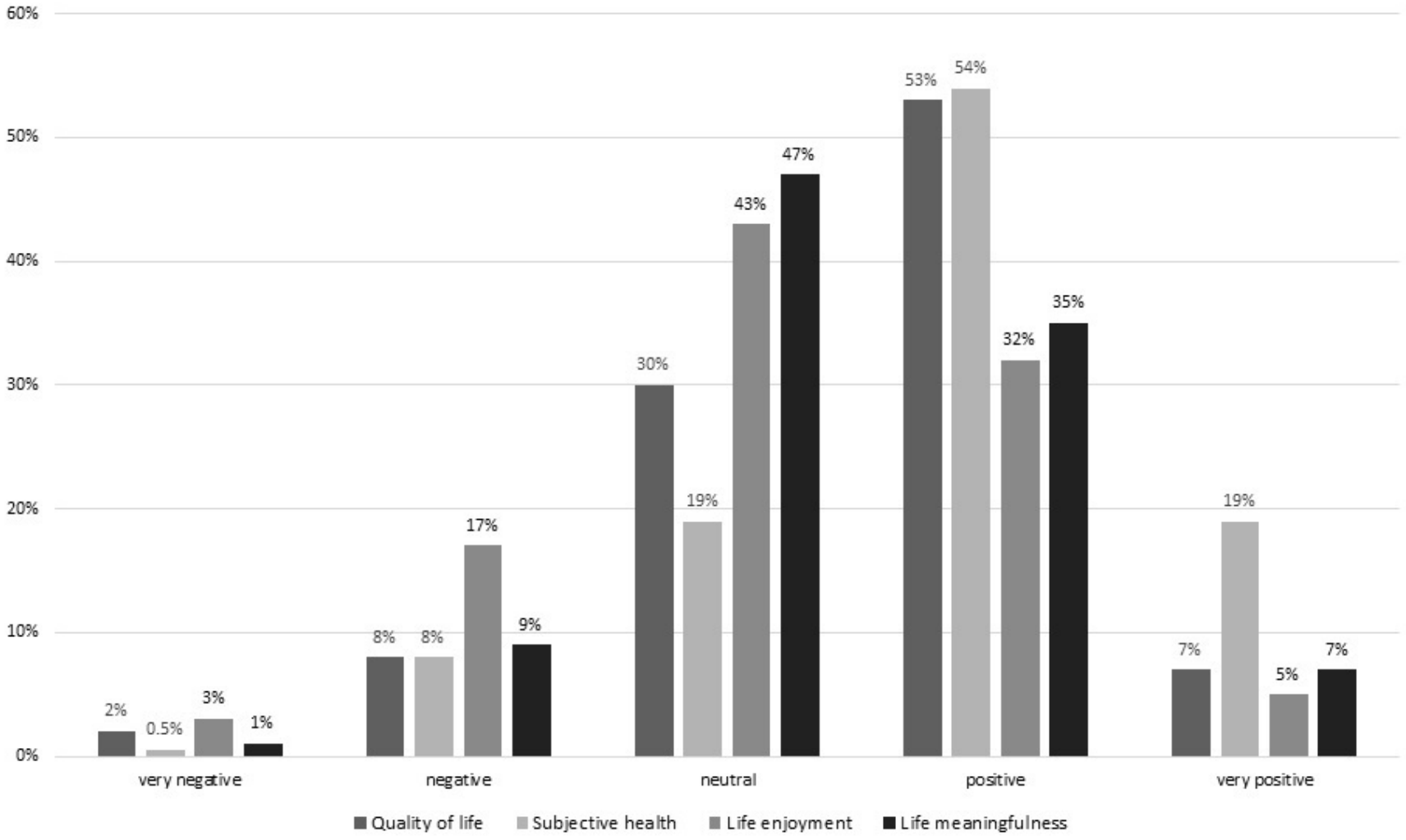

Figure 4.5: Survey 2 - Reported health and wellbeing.

ingfulness. Older participants showed higher overall mindfulness[8] (small positive correlation, $r(213) = 0.195$, $p = 0.004$), and female and non-binary participants showed higher Observation (small positive correlation, $r(213) = 0.199$, $p = 0.003$).

Certain mindfulness facets, furthermore, were linked to negative feelings and health difficulties. Participants who experienced frequent negative feelings showed lower overall mindfulness (medium negative correlation, $r(213) = -0.328$, $p < 0.001$), suggesting that the presence of negative feelings may hinder the development of mindfulness, or that the lack of mindfulness may hinder the effective management of negative feelings. Frequent negative feelings were also specifically linked to Action Awareness (medium negative correlation, $r(213) = -0.343$, $p < 0.001$), and Non-judgement (medium negative correlation, $r(213) = -0.307$, $p < 0.001$). In fact, Action Awareness[9] and Non-Judgement are the most important mindfulness facets in predicting psychological symptoms; they can act as independent predictors of depression, while the Non-judgement facet is a significant predictor of anxiety and stress (Cash and Whittingham, 2010). Participants who reported health difficulties also showed lower Action Awareness (small negative correlation, $r(213) = -0.199$, $p = 0.003$) and Non-Judgement (small negative correlation, $r(213) = -0.195$, $p = 0.004$), extending findings by Cash and Whittingham (2010) and Baer et al. (2006) that use the facets of Action Awareness and Non-Judgement as predictors for psychological symptoms, and suggesting that these mindfulness facets may also be predictors of health difficulties overall, mental and physical, as found in Survey 2. Experiencing mental and physical health challenges could be linked to introspection and reflection on symptoms, which could lead to increased judgement and self-critique (de Bruin et al., 2012). On the other hand, individuals with a higher ability to not judge their inner experiences may also be more aware of resources and positive reinforcement from their environments, leading to lower risk of depressive symptoms (Cash and Whittingham, 2010).

The Non-judgement mindfulness facet took on particular importance in the context of this research. Participants who experienced negative feelings and faced physical and mental health challenges were more critical of their sensations, cognitions and emotions (low Non-judgement), as opposed to those who did not face these challenges and were able to evaluate their experiences without judgement (high Non-judgement). This finding extends previous research drawing links between Non-judgement and psychological symptoms (see Baer et al., 2006; Cash and Whittingham, 2010), suggesting that it may also be linked to physical health difficulties. Due to this association, the Non-judgement facet was used to explore links between health and wellbeing, and specific

[8] Overall mindfulness was calculated as the mean of all five mindfulness facets measured in the survey.

[9] The Action Awareness mindfulness facet, while significant according to Cash and Whittingham (2010), was not found to be associated with the majority of music listening behaviours, therefore, was not explored further in this thesis.

music listening behaviours, further discussed in Chapter 5, offering further insight into the music listening behaviours of listeners who experience negative feelings or have health difficulties.

The participants also discussed a range of activities and factors that have a positive or negative impact on their health and wellbeing. This suggests that individual lives are affected differently, and that self-care and wellbeing enhancement can be highly personalised. Music was discussed as a positive influence, while a small number of participants highlighted its potential negative impact as well. When discussing activities that made them feel better, participants described a range of leisure activities[10] and emphasised the significance of personal preference (11%), for example listening to their favourite songs or watching their favourite comedies. When discussing what kind of things made them feel worse about themselves and their life, most participants referred to material difficulties (45%), such as finances, issues to do with social relationships (37%), or difficulties to do with their health (24%) and work-related problems (22%)($N = 215$). In the context of this research, it is significant that music was also discussed as a potential negative influence, without prompting[11], but only by two participants.

4.3.2 Main findings: Music listening behaviours and health and wellbeing in everyday life

Survey 2 further confirmed the relationship between music listening and health and wellbeing and supported the importance of music listening as a salutary recourse in the listeners' everyday lives. Exploring the effects of music listening, both the potential positive and negative impacts were highlighted, and further influencing factors were discovered.

4.3.2.1 Music listening in everyday life

Why we listen to music

Why we listen to music differs between listeners and situations and is linked to our health and wellbeing. All participants listened to music to enjoy the music itself, but beyond that each individual listened to music for specific but not *all* possible reasons. Certain reasons for music listening were more prevalent, such as to enjoy the music

[10]The most popular activities to feel better among participants were watching movies or TV (47%), physical activities (46%), such as sport or dancing, and engaging with music (36%), all activities that were explored in Survey 1, as well as activities with others, such as engaging in social relationships (35%)($N = 215$).

[11]While there was a specific question later in the survey asking when music listening has been unhelpful in the past, this refers to the open question on what factors influence the participants' health and wellbeing negatively.

or to get energised and motivated, and are discussed as the "average" listener profile in Chapter 5. Furthermore, certain reasons were linked to higher or lower health and wellbeing, which suggests that healthier/more well or less healthy/less well listeners may be more likely to use music listening for specific functions, as presented in the "healthy" and "unhealthy" listener profiles in Chapter 5.

Demographic characteristics play a role in why we listen to music. Female participants were more likely to listen to music to dance, $\chi^2\,(8, N = 215) = 21.133$, $p = 0.007$), and younger participants were more likely to listen to music to reduce anxiety and stress (small negative correlation, $r(213) = -0.182$, $p = 0.008$), for distraction (small negative correlation, $r(213) = -0.286$, $p < 0.001$), and to help concentration (small negative correlation, $r(213) = -0.194$, $p = 0.004$). This highlights that reasons for listening to music can be highly individual, however follow certain trends, changing through the listener's lifespan.

Certain reasons why participants listen to music were also associated with higher health and wellbeing through small positive correlations, such as to pass the time, to listen to the lyrics, or to dance. On the other hand, other reasons behind music listening were linked to health difficulties. Participants who experienced negative feelings more frequently, were more likely to listen to music to feel less lonely, to reduce anxiety and stress, for distraction and to better cope with problems. Low Non-Judgement, linked to mental and physical health difficulties and negative feelings, was associated with further particular reasons for listening to music, such as to soothe physical pain, to help do physically difficult things, to feel a greater sense of belonging, to change mood, to avoid contact with others, and to feel somebody else feels the same way they do. Despite these differences, certain reasons for listening to music, for example listening to fill the silence, were associated with both positive and negative health and wellbeing indications. This suggests that participants with higher wellbeing may listen to music for the same reasons as participants who face health difficulties and negative feelings, but there are also reasons for listening that differ between these two groups of participants, as represented in the listener profiles in Chapter 5.

These findings support the wide functionality of music listening and highlight the link between reasons for music listening and health and wellbeing aspects. Certain reasons were more prevalent, but each listener uses music differently. Some reasons, furthermore, were used by participants with higher health and wellbeing, or those with health difficulties. These similarities and differences are further discussed in Section 5.2 through the healthy and unhealthy listener profiles.

How we choose what music to listen to

Once more, how we choose music is very individual and contextual, and is linked to health and wellbeing. All participants chose music based on their preference, but otherwise all the choice factors listed in the survey were more or less significant for different listeners. Certain choice factors were more prevalent and are discussed as the average listener profile in Chapter 5. Demographic characteristics play a role in how we choose our music; female participants were more likely to choose music if they knew it, $\chi^2\,(8, N = 215) = 39.689$, $p < 0.001$, and those with higher education degrees chose music more based on intramusical characteristics such as genre and tempo, $\chi^2\,(16, N = 215) = 37.442$, $p = 0.002$.

Choice factors were also linked to higher health and wellbeing through small positive correlations, such as choosing music the listeners know. Choosing music that they could sing, play or dance was also positively linked to higher health and wellbeing, even though it was reported as the least important factor overall. This suggests that a smaller subgroup of participants who choose music this way may deviate from the majority in this sense, and that singing, playing or dancing along to the music may offer a further way to engage, deepening the music listening experience and strengthening its impact. On the other hand, choosing music based on intramusical characteristics was linked to both higher and lower health and wellbeing measures; it was associated with higher Observation and Non-reaction, showing higher wellbeing, and Non-judgement, linked to health difficulties and negative feelings. This suggests that choosing music based on music itself might be particularly important for those on both ends of the wellbeing continuum, and possibly less so for averagely well participants. These findings highlight that how one chooses what music to listen to is highly personal and situational, and is also linked to the participants' health and wellbeing.

How we listen to music

Again, the results highlighted that a wide variety of listening mediums are used by participants, but individuals have their preferred ways of listening to music. Most participants said they often listen to music through their own playlists, or listen to a specific album, artist or piece, as reflected in the average listener profile in Section 5.2.1. However, all listed music listening mediums were used by participants with varying frequency, further supporting that listeners engage with music in many different ways, but not necessarily all possible ways. Older participants listened to the radio more frequently (small positive correlation, $r(213) = 0.222$, $p = 0.001$), with younger individuals listening to music more on TV, $\chi^2\,(16, N = 215) = 36.967$, $p = 0.002$, and on random or shuffle, $\chi^2\,(16, N = 215) = 44.924$, $p < 0.001$.

Certain music listening mediums were also associated with health and wellbeing. Listen-

ers who reported higher health and wellbeing listen to music using particular mediums, as reflected in the healthy listener profile in Chapter 5, such as listening to music live or to someone else's suggestions, or one's own playlist. Listening to music in shops and public spaces was also associated with higher health and wellbeing, despite being uncommon on average, therefore potentially being more characteristic of participants on the higher end of the wellbeing continuum. On the other hand, those who experience negative feelings or health difficulties seem to listen to music similarly to the average listener in this aspect, as music listening mediums were not linked to Non-Judgement, associated with negative feelings or health difficulties.

Where and when we listen to music

Where and when we listen to music is also highly individual and linked to health and wellbeing measures. Certain music listening contexts were more prevalent, such as listening to music in isolation, when relaxing, when doing repetitive tasks, or driving, as seen in the average listener profile in Chapter 5, although different contexts are appropriate for each listener. Younger participants listened to music more when relaxing (small negative correlation, $r(213) = -0.188$, $p = 0.007$) or exercising (small negative correlation, $r(213) = -0.200$, $p = 0.004$), and female participants listened to music more frequently when driving, $\chi^2\,(4, N = 215) = 16.426$, $p = 0.002$.

Music listening contexts were also linked to health and wellbeing. For example, listening to music when with friends, family members or a partner, when exercising, when going out, or at concerts was linked to higher health and wellbeing. Listening to music with unfamiliar people or while having a meal was also more likely for healthy participants, despite being two of the least reported contexts overall, suggesting that they may be more characteristic of listeners who are on the higher end of the wellbeing continuum, as reflected in the healthy listener profile in Section 5.2. Music listening contexts were not associated with Non-Judgement, suggesting that participants with health difficulties or negative feelings listen to music in contexts similarly to those who don't, like average listeners.

How often and for how long we listen to music for

Survey 2 further confirmed the prevalence of music listening. In line with the Survey 1 findings, most participants (51%) reported listening to music every day between 7-15 hours (37%) or for more than 15 hours per week (27%)($N = 214$). The Survey 2 participants, however, listened to music for a longer duration than those in Survey 1, this result potentially due to the survey's explicit focus on music listening. Younger participants listened to music more frequently (small negative correlation, $r(212) = -0.221$, $p < 0.001$), and listeners tended to consistently either engage with music

listening more frequently and for longer, or not, with higher frequency linked to longer listening duration (medium positive correlation, $r(212) = 0.487$, $p < 0.001$), as also found in Survey 1.

As with all other music listening behaviours discussed above, music listening frequency and duration were associated with health and wellbeing aspects, through small positive correlations, with those who listen more frequently and for longer being more likely to report higher health and wellbeing.

The Virtuous Cycle

A new and important influencing factor was found when looking at music listening frequency and duration. It seems that those who are more likely to listen to music more frequently and for longer, also measure highly on a triangle of important and related factors, reflecting a particular approach towards music and music listening, as seen in Fig. 4.6: higher music listening frequency and duration were linked to 1) high importance of music, 2) high positive influence of music listening on wellbeing, and 3) the successful use of music listening to cope. In a sense, these three elements form a feedback loop with favourable outcomes. This triangle, a construct that is discussed in this thesis as the Virtuous Cycle, is highly important due to its particular associations. The Virtuous Cycle is independent of demographics and music listening behaviours overall. How high or low a listener measures on the Virtuous Cycle has nothing to do with their gender, age, nor nationality, for example, and furthermore is not linked to particular ways of listening. Despite its independent nature, however, those who measure high on the Virtuous Cycle listen to music more frequently and for longer, and are healthier and well.

The Virtuous Cycle is a highly significant finding and may indeed be the further influencing factor that was implied in the Survey 1 findings. It suggests that the relationship between music listening and health and wellbeing goes beyond particular healthy or unhealthy ways of listening to music, and that one's approach and mind frame towards music listening may play a more important role. The Virtuous Cycle is further discussed in Section 5.3.

How important is music

Importance of music in the participants' lives becomes more significant in the context of this research as it is part of the Virtuous Cycle. As part of this construct, importance of music was linked to the other two variables in this triangle: music listening as a positive influence on wellbeing (large positive correlation, $r(212) = 0.725$, $p < 0.001$) and the successful use of music listening to cope with problems (medium positive correlation, $r(212) = 0.423$, $p < 0.001$).

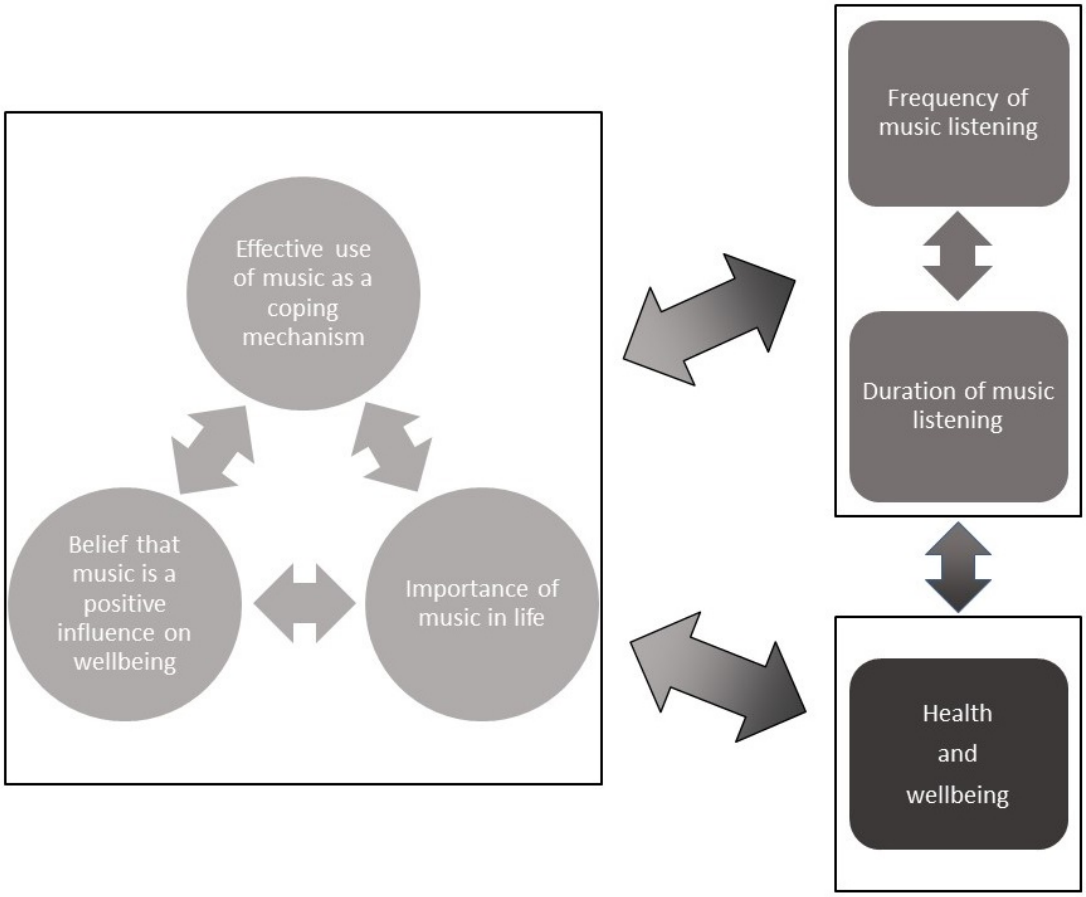

Figure 4.6: The Virtuous Cycle and its link to music listening frequency and duration, and health and wellbeing.

Music was important for most participants, with 40% saying it is very important ($N = 214$). It was linked to music listening frequency and duration, as discussed above, and to health and wellbeing, but not to demographic characteristics, nor to other music listening behaviours. The association between importance of music and reported health specifically (small positive correlation, $r(212) = 0.186$, $p = 0.006$) seems to further support the indirect and mediated relationship between music listening and health, as found in Survey 1.

As part of the Virtuous Cycle, the importance of music is an intriguing variable; it is linked to higher health and wellbeing and more frequent and longer listening, independently of who the listener is or why, when, or how they listen to music. This encourages us to look beyond healthy or unhealthy ways of listening to music, but rather look at how listeners perceive the role and effect of music listening.

Change in music listening

Change in music listening is significant for health and wellbeing, as specific music listening behaviours are linked to demographic characteristics and health and wellbeing aspects, and it can have important effects and reflect change in one's needs. Indeed, most participants (64%) reported change in how and why they listen to music during their lifetime, indicating that such change is noticeable and significant for the listener, and highlighting that listeners are not static but ever developing ($N = 214$). Furthermore, change in music listening behaviours may be more prominent for listeners who face health difficulties or experience negative feelings; Non-Judgement, associated with negative feelings and health difficulties, was linked to reported change in music listening (small negative correlation, $r(213) = -0.206$, $p = 0.002$). Health difficulties, therefore, may be linked to more frequent or evident change in music listening. On the other hand, however, it may be that the change taking place is not different to that of more healthy and well listeners, rather that those who have health difficulties may be more aware of change in their behaviours.

The change discussed by the Survey 2 participants highlighted that music listening changes in time, naturally, as listeners' lives and needs change, greatly influencing the music listening experience and its impact. Change in music listening is common according to the participants, despite being largely unexplored in relevant literature, and is important in the context of health and wellbeing, highlighted and further discussed in Chapter 5 and Chapter 8.

4.3.2.2 The relationship between music listening and health and wellbeing

The influence of music listening on wellbeing

The participants recognised that music listening can have both a positive or negative influence on health and wellbeing, however existing health difficulties play a role in this. Most participants saw music listening as a positive influence on their wellbeing, very much (52%) or extremely so (22%), independently of whether they have health difficulties or negative feelings. Furthermore, more than half (52%) said that music listening does not influence them negatively at all ($N = 214$). On the other hand, 48% recognised the potential negative effect of music listening on wellbeing, but participants with health difficulties were more likely to, $\chi^2\,(4, N = 214) = 15.612$, $p = 0.004$. This suggests that music listening may be equally likely to have positive effects on listeners with health difficulties, making it an important salutary resource. However, it may be more likely to have a negative influence on listeners with health difficulties than their healthier and more well counterparts, or those listeners may have a more cautious approach towards music listening, noting the potential negative effects. Despite this, there was no link to lower health and wellbeing, possibly pointing to safeguarding strategies developed by the listeners to minimise the negative influence. The link between negative impact and health difficulties is important, as it indicates that listeners who are already vulnerable may be more at risk than others during music listening. This was further explored in the interviews, and is highlighted in Chapter 8, proposing a link between specific bodies of music and the participants' wellbeing.

Listening to music to cope with difficult times

Music listening is an important salutary resource and most participants confirmed that it has indeed helped them cope with difficult times (84%). However, a high proportion (41%) of those participants who said that music listening has helped them also admitted that it has proven unhelpful in certain situations ($N = 214$). Participants explained how music listening can be both helpful and unhelpful, even for the same individual and in similar situations, for example, in dealing with health challenges, death and loss, and in emotional situations such as relationship break-ups, as seen in Table 4.2.

Given that music listening, therefore, can be helpful, unhelpful, or even have a negative impact for the same individual and in equivalent situations, what does this depend on? The participants noted the influence of two factors, 1) the appropriateness of specific music and 2) their approach towards music listening: in other words, the Virtuous Cycle.

Listening to specific music is more helpful according to participants, however, they emphasise how individual this is rather than making blanket suggestions for healthy

Table 4.2: Music listening as helpful or unhelpful with equivalent difficulties.

Music listening was helpful	Music listening was unhelpful or negative
Health challenges	
(Music listening helped with) releasing my stress while I was (. . .) going through (. . .) Tuberculosis treatments. It helped motivate me (. . .) to not give up on hope that I could be cured from the serious infection.	When my head hurts, because I suffer from migraines, music does not help me, I just want silence.
When I was in hospital I was listening to calm and relaxing music on my headphones and it really helped me.	If I am sick, music can't heal me.
Death and loss	
After my father died, my favourite band released a song called *And my father left forever* which described my feelings perfectly.	When you miss someone badly and you listen to any songs which remind you of your past times, it will make the situation worse.
When my husband died, I listened to a lot of music about getting back to my normal self and it encouraged me to try to be strong and deal with it.	When someone I care about leaves or dies, music can't help me because that's a big pain to feel.
Memories	
When my mother passed away, I listened to Elvis Presley a lot because it reminded me of her, (. . .) it was like I had a little of her with me.	Sometimes if I listen to an old playlist there is a song I forgot about that has an unpleasant memory associated with it.
Relationship break-up	
(Listening to music helped) when I was depressed and broken because of a break-up, and music helped me cope with it.	When my significant other broke up with me nothing helped, (. . .) music did not help as it brought back memories and also got me irritated.
When my girlfriend broke up with me, I was really sad and very much not interested to do anything besides playing video games to kill time and forget about my feelings, but while I was playing a video game I heard this really good fast-paced song, (. . .) that really helped me (. . .) feel like doing something productive.	In the break-up with my ex-girlfriend, I felt pretty bad for like 2 or 3 weeks, and whenever I tried to listen to some music, it didn't work. The worst thing about it is attaching the sadness of that situation to some of the songs I liked in the past, so when I hear them now they remind me of that time.

listening. Not just any music will help, it is highly personal and context specific. "Find your song that identifies you" a participant urged, as "everybody needs to experience individually what works for them". "Listen to music that is in harmony with your soul" and "listen to an artist who knows your story" some participants advised, highlighting how music listening for wellbeing is deeply personal and linked to their lives. Some described trying certain music and changing it as it wasn't helping, a participant saying "I was depressed (...) and started listening to my favourite romantics, but (...) I decided that listening and salsa dancing was the solution". Preferred music seems to work best for participants. "I listened to my favourite songs, (...) 20 minutes after, I felt better (...) and I found a solution to my problem" one of the participants said, and sometimes on repeat, for example "after a series of unfortunate deaths in the family, I focused on a few songs and just kind of kept repeating them over and over". Participants also emphasised the importance of listening to music with no judgement; "they should listen to the music they like (...) and don't let anyone tell them otherwise". Further emphasising how personal music listening for wellbeing is, some participants discussed certain music that seems to always help them, for example participants said "*Ray of Light* by Madonna, whenever I feel low and I listen to this song it helps me instantly" and "I was very depressed by the death of my grandfather, but listening to Radiohead helped me a lot, it always does in those moments". This specific music used as a constant resource seemed to have an important role in the participants' lives, as one listener highlighted, saying "(at difficult times) I was listening to Interpol. As a band that I started listening to 11 years earlier, (...) I am still attached emotionally with these songs and it still brings memories".

The difference in participants' approaches towards music, their Virtuous Cycle, was also reflected in their answers. Most participants expressed a strong belief in the constant positive influence of music listening based on their past use of music listening to cope, saying, for example, "through music, all problems are easier to understand; music is in the world to make our lives happier" and "music will always help". Characteristically, some participants said "during the course of my life music has become my ally, my confessor, the friend who in low moments lifts me, the partner in memorable moments whether positive or negative" and "a little music is like taking a relaxing pill (...), music is what keeps me in an optimal state to deal with daily problems". On the other hand, when describing music as unhelpful, music was not important for the participants at the time and they did not expect it to help them, having "a rational brain", as one participant pointedly said. For example, some listeners explained that "life is not music listening only" and listening to music "doesn't solve my financial problems, nor bring my health back". In fact, one participant compared music listening to drugs, saying:

> (Music listening) has become an addiction which is not good for everyday life. People should know what real life is. Music is only imagination life,

> like (when) people take drugs and they don't know where they are. Music is damaging for health if we increase the dose.

Furthermore, others pointed out the briefness of its benefits, saying "when the song ends, my problem is still there", "the feeling of wellbeing is short", and "listening to music can only make you temporarily forget about your problems".

Rather than the approach towards music listening, however, being different between people, listeners may have a different approach to music listening at different times. For some this had to do with how significant their problems were, saying that listening to music doesn't help "when you can't escape the problems, when they are really serious", or "in times when I feel like I'm beyond salvation and not even music can help me". Sometimes other resources are needed, "there are many situations in life that are resolved without musical notes in your ears. Specific knowledge is needed to solve them". Seeing music as less important and as less of a positive influence when in dire difficulties, could explain why music listening is more likely to have a negative impact on those who are facing health difficulties, as they may not have such a strong belief in the positive influence of music listening at that time. Participants further highlighted the importance of how music listening is approached, saying "it's not that music might not help me, but it's the way we listen to it" and "in certain situations your head does not allow you to focus on the music, so it becomes irrelevant". While finding the right music is important, one must have the right approach when listening to support a positive effect and avoid negative outcomes. Accordingly, the participants offered words of caution, showing awareness of the potential side-effects of music listening. For example, some advised to "avoid songs too depressive or that stimulate bad feelings" and to "not listen to music when you are extremely sad, as it makes you feel worse". A participant explained that "when one is depressed (and listens to music), (. . .) one is even capable of suicide".

Overall, participants showed extensive understanding and awareness of both the positive and negative effects of music listening in the context of health and wellbeing, further highlighting the role of the Virtuous Cycle, and that experience and knowledge is required to select appropriate music and to avoid risk. "Music is a very powerful tool and you need to know how and when use it", and "not all kinds of music are beneficial", some stated.

Music listening for wellbeing as a "prescription"

When discussing music listening for wellbeing, the participants described types of music they should listen to or avoid, how music listening can help, and in what context. Their

advice[12] is comparable to a prescription of music listening, and has been collated in Table 4.3, focusing on what should be listened to (the "medicine"), for what reason (the "ailment"), how (the "conditions" or "dosage"), and with what it will help (the "cure").

Table 4.3: Music listening advice as a prescription.

For what	What music	How	Why
If you are anxious and you feel stressed	Soothing music	Listen to a personal and tailor-made playlist. The music in this playlist is to be chosen carefully and based on personal issues	You need to relax
If you're nervous or sad	Slow, quiet, classical music		Calms you down, reduces stress
	Listen to music that you like the most	At least 10 hours per week	It gives you pleasure and eases your pressure
	Listen to your favourite music	Alone, listen for about 15 minutes	You will feel better
When you feel the need to be alone with your thoughts	Find music that soothes you, your mind, your soul, your overall wellness	Find the right music	Does a lot of positive things for you, it's very helpful
	Listen to the music you like and your favourite artists	Spend 20 minutes dancing and singing along, just think about the music and nothing else	You will forget all your worries, it will change your mood and you will no longer focus on the negatives occurring around you

The participants further highlighted that music listening for wellbeing is highly personal, and due to this some were reluctant to offer advice: "there's no general advice or pattern", "it's too personal", "the truth is none", and "it's something that has to be born", some participants offered.

This open-ended question highlighted that participants have a sophisticated understanding of how they use music listening to enhance their wellbeing, and both its positive and negative effects. It was seen as highly personal, holding potential risks, and "administered" through prescription-like practices based on learning from one's experiences. These elements, explored further in the subsequent interviews, complement

[12]Not all participants described all the elements. Overall, however, those were the aspects addressed by the participants, coming together as a music listening "prescription".

the survey's quantitative findings discussed above. Specific music listening behaviours are linked to health and wellbeing aspects and provide some insight into how listening may differ between more or less healthy and well listeners or times. However, music listening for wellbeing is highly individual and contextual, and its effects are associated with the listener's approach towards music listening, the Virtuous Cycle.

4.4 Summary

This chapter discussed the design, data collection, and data analysis processes used for Surveys 1 and 2, and presented their participants and main findings. Survey 1 confirmed the prevalence of music listening in the everyday life of an international general population. Music listening was found to have an important relationship with health and wellbeing, as, unlike reading or watching TV, listening to music frequently and for longer was linked to higher life satisfaction, and indirectly associated with higher health.

Survey 2 further confirmed the relationship between music listening and health and wellbeing in a large and diverse international sample, through statistical links between specific music listening behaviours and health and wellbeing aspects. This relationship, however, is mediated by a further factor beyond specific ways of music listening: the Virtuous Cycle reflects the listener's mind frame, if music is important to them, whether they see music listening as a positive influence, and if it's helped them cope in the past. Music listening was indeed seen as an important salutary resource by the participants, individually "prescribed" to help with a wide range of difficulties. However, the potential negative effects of music listening were also recognised, discussed in terms of the appropriateness of specific music and how the listener portrays the Virtuous Cycle. Focusing on the relationship between music listening and health and wellbeing, the Survey 2 main findings are the following:

1. **Specific music listening behaviours are linked to higher or lower health and wellbeing**.

   Differences and similarities were found between specific listening behaviours associated with higher or lower health and wellbeing. For example, certain music listening reasons were associated with higher health and wellbeing on the one hand, such as listening to music to dance, play or sing along with, and others with experiencing negative feelings, such as listening to feel less lonely. These findings form the average, healthy, and unhealthy listener profiles discussed in Chapter 5. They highlight that certain small differences in music listening behaviours could be highly significant in the context of health and wellbeing, without implying

causation, instead highlighting potentially two-way relationships between music listening and health and wellbeing. Music listening influences the listener's health and wellbeing, and it is in turn influenced by it, in a reciprocal relationship.

2. **Change in music listening is prevalent and important in the context of health and wellbeing**.

   Music listening changes during the lifespan, potentially more noticeably for those who have health difficulties or negative feelings. This change can involve aspects of music listening, such as reasons or contexts, that are linked to health and wellbeing, and therefore may have an impact on health and wellbeing, or can reflect a change in wellbeing needs. This change, furthermore, urges us to look at listeners as adapting and developing, rather than static.

3. **Music listening for wellbeing is precise, but can have negative side-effects**.

   Music listening for wellbeing was discussed as precise, individual, and contextual, taking the form of a personal "prescription". Music listening is mainly a positive influence on wellbeing, however, it can prove to be unhelpful, even for the same listener and in similar situations, such as when a loved one dies. Participants saw the negative effects of music listening as depending on the appropriateness of the chosen music, and discussed it through presenting a particular approach towards music listening, as expressed through the Virtuous Cycle; at certain times music was not seen as important, nor as a positive influence, failing to help them cope. Listeners with health difficulties may be more likely to be affected negatively, however they may have developed safeguarding strategies that limit potential negative effects, as there was no statistical link to lower health and wellbeing.

4. **The Virtuous Cycle is an important mediating factor in the relationship between music listening and health and wellbeing**.

   The three elements of this construct, i) the importance of music in life, ii) music listening seen as a positive influence on wellbeing, and iii) its successful use as a coping mechanism, hold an important role. On the one hand, the Virtuous Cycle is linked to more frequent and longer music listening, and on the other to higher health and wellbeing, while it may also influence whether music listening will have positive or negative wellbeing outcomes. These three elements, furthermore, are independent of demographic characteristics. The Virtuous Cycle is an important emerging finding; as a mediating factor in the relationship between music listening and health and wellbeing, it highlights the role of other, less "tangible", elements beyond specific music listening practices; it is not about simply listening to music more or for longer.

These findings take forward the Survey 1 findings, providing in-depth insight into specific associations between music listening behaviours and health and wellbeing aspects, as well as exploring the positive and negative impact of music listening, and how it is used for wellbeing. The next chapter discusses the findings from Surveys 1 and 2, introducing the listener profiles and the mediated nature of the relationship between music listening and health and wellbeing.

Chapter 5

Discussing the survey findings

5.1 Introduction

This chapter discusses the survey findings, highlighting aspects of the relationship between music listening and health and wellbeing. The most common music listening behaviours are presented, providing a baseline of what everyday music listening looks like for the majority, the "average" listener. Specific music listening behaviours statistically associated with higher reported health and wellbeing on the one hand, and reported mental and physical health difficulties on the other, are presented through the "healthy" and "unhealthy" listener profiles below, proposing that music listening is different when experiencing different levels of health and wellbeing. Finally, this chapter discusses the Virtuous Cycle, an important influencing construct found in this research, and expands on the mediated nature of the relationship between music listening and health and wellbeing, highlighting the role of factors beyond specific music listening behaviours.

5.2 The listener profiles

The Survey 2 findings suggested that participants listen to music differently when they are feeling well compared to when they are facing health difficulties. These differences and similarities are presented through a set of listener profiles, based on prevalence of listening behaviours and statistical correlations between specific music listening behaviours and health and wellbeing aspects. Associations are reported without implying causation, simply presenting statistically significant links. Interpreting the data as reflecting the listeners' behaviours at that point in time, the profiles present the music listening of what might be seen as average, healthy/well, and unhealthy/unwell listeners, providing insight into how music listening may differ between healthy and well, or

less healthy and well times in listener's lives. Music listening changes within listeners' lives, and these profiles represent how certain music listening behaviours are associated with changes in health and wellbeing.

5.2.1 Everyday music listening: The average listener

What does most music listening in everyday life look like? A great variety of music listening reasons, choices, mediums, and contexts are given by listeners, as found in Survey 2, with certain music listening behaviours more prevalent than others, while each listener employs distinct music listening behaviours. Based on prevalence, the average listener profile presents the most common music listening, with most listeners reporting being moderately well.

When do we listen to music? Frequency, duration, and importance

Most participants reported that music is very important to them and they listen to music for several hours every day, in line with existing research both cross-culturally and within smaller sub-populations (see Caldwell-Brown and Krause, 2016; Laukka, 2007; Lonsdale and North, 2011; Papinczak et al., 2015).

Why do we listen to music? Reasons and functions

All participants said they listen to music to enjoy it, as found in a large body of existing literature (see Greasley and Lamont, 2011; Tarrant et al., 2000). Other popular reasons for listening, as seen in the average listener profile in Fig. 5.1, were to get energised and motivated, to relax and calm down, and to reduce anxiety and stress. The most common reasons for listening to music were arousal, mood, and affect regulation, distraction, and relaxation, again in agreement with findings from research within the general population and specialised groups (see Greasley and Lamont, 2011; Krout, 2007; Laukka, 2007; Mitchell et al., 2007; Pelletier, 2004; Saarikallio, 2010; Schäfer et al., 2013b).

Certain trends were found in reasons for listening to music. Music seems to fulfil different needs between age groups, with younger participants reporting that they listen to music more for emotional regulation, to separate themselves from other family members, to create personal space, and to help with concentration, compared to older participants, agreeing with previous research findings (see Groarke and Hogan, 2016; Lonsdale and North, 2011; Papinczak et al., 2015; Tarrant et al., 2000; von Georgi et al., 2008). However, in contrast to previous research (see Groarke and Hogan, 2016; Kreutz et al., 2008; Miranda and Claes, 2009), differences in listening reasons based on demographics were not extensive. The current study found that why we listen to music is highly individual, with each participant reporting that they listen for distinct reasons, as also found by Laukka (2007) and Greasley and Lamont (2011). The adaptability

of music listening allows it to function as a "technology of the self" used differently by each listener (DeNora, 2000). For example, to get energised and motivated, and to relax and calm down were two of the most reported reasons for listening to music in this research; this, however, does not mean that most listeners do both. This is very important when looking at who listens to music for which reasons. Demographic differences did not seem to fully explain why participants listen to music for different reasons, indicating that there may be other factors determining the reasons behind music listening, for example the listener's health and wellbeing status.

What do we listen to, how and where? Music choice, listening mediums, and contexts

Listeners choose music in different ways and listen through a wide range of mediums and in various contexts. Most participants choose what music to listen to based on personal preference, as also found by Rentfrow (2012). Female listeners preferred familiar pieces, and higher educated participants were more likely to say they choose music based on intramusical elements, such as genre or tempo. However, music selection criteria differed between listeners independently of demographics, which becomes important as they can have significant consequences on the music listening experience, according to Krause et al. (2014a).

Most participants listen to music through personal playlists, or specific albums, artists or pieces, and rarely listen to music live, as also found by Caldwell-Brown and Krause (2016). While we can now listen to specific music in more and more situations and in different ways, it is evident that listeners choose between mediums of music listening methodically, and not as mere passive consumers; listeners choose how to listen to music and how not to (Caldwell-Brown and Krause, 2016; Sloboda et al., 2009). In fact, the device involved in music listening is seen to be another element of how music is experienced (Krause and North, 2014a), defining the extent of user control and the listening outcomes (Krause and North, 2015). The Survey 2 findings suggested that, in most cases, listening involves high level listener control, for example through personally curated playlists. The Survey 2 participants mostly reported listening to music on their own, when relaxing, when doing repetitive tasks, and when driving. Certain age differences were found, however, with older participants listening to the radio more, and younger ages listening more frequently on TV, and on random or shuffle, in agreement with previous studies (see Krause and North, 2014b; Laukka, 2007). Once more, the current findings suggested certain patterns in music listening, however, they also highlighted how music listening is used differently by participants and that there is no single average listener in reality.

Figure 5.1: The average listener profile.

A lifetime of music listening

Music listening is a multifaceted activity addressing everyday needs, thus could be expected to develop and change alongside the listeners themselves and their lives. Indeed, certain music listening behaviours can differ between younger and older participants, as discussed above, with listeners adapting their behaviours more frequently and widely than considered before (Greb et al., 2017). For example, older adults may use music more in highly stressful situations and less for everyday affect regulation compared to young people (Groarke and Hogan, 2016; von Georgi et al., 2008). In most literature, however, differences are mainly presented as between age groups, with little discussion on the process of this change, how it takes place, or how short- or long-term it can be. While this implies that certain change has taken place, there is however limited literature directly addressing the topic of change in music listening. For example, Saarikallio (2010) discussed change in the use of music listening for emotional self-regulation, describing three categories of change: i) by age, with listeners gradually learning more about the power of music; ii) event-related fluctuations, linked to life situations and with music becoming more important during hardships; and iii) retirement transition, with music becoming more important for particular needs for older adults, such as asserting/maintaining agency and capability.

During the listeners' lives, music preferences, needs, and identities develop and change, as do music listening behaviours. As one participant observed, "as you mature in life, the music is maturing in you". Indeed, for most participants music listening has changed during their lives. In certain research, however, listeners are discussed as static, clustered according to the ways they engage with music based on the assumption that they always listen in the same way, as highlighted by Greb et al. (2017) (see ter Bogt et al., 2011). On the other hand, differences linked to age can provide insight into how different age groups listen to music, but cannot explain when, how, and why music listening behaviours change or whether further factors are at play. Greb et al. (2017) highlighted that listeners adapt their listening to their specific situation, and this must be taken into consideration. Given the link between music listening and health and wellbeing, the reported change in music listening could reflect other change and have important implications. For example, digital listening mediums often play or suggest music based on the listener's past or current listening, without taking into account potential change and with no direct way for the user to register or control this.

This section presented the most common ways that participants choose what to listen to, when, why, and how they listen to music, and in what context, also discussing self-reported changes in music listening. The average listener profile is a static representation of prevalent music listening behaviours, presenting what most music listening looks like. It is recognised, however, that it is fictional and out of context; a somewhat

fragmented depiction of music listening removed from an individual listener's life. In reality, each participant presented a distinct individual set of music listening behaviours, adhering to the average in some respects and deviating in others, with their listening changing through their lives. The healthy and unhealthy listener profiles discussed below present the music listening behaviours associated with higher health and wellbeing, and health difficulties accordingly.

5.2.2 The healthy listener

The healthy listener profile[1] presents the music listening behaviours associated with participants reporting higher levels of health and wellbeing, indicated in this research through the absence of health difficulties, as well as high reported mindfulness, quality of life, and life enjoyment, satisfaction, and meaningfulness.

Healthier and more well participants listen to music for a wider set of reasons than the average listener, mainly focusing on reinforcing their positive feelings and situations, for example to pass the time, to express themselves, to dance, and to fill the silence. These findings are in agreement with existing literature stating that the motives behind why people engage in activities have important consequences on wellbeing (see Laukka, 2007). For example, using music to dance is a form of emotional expression and a way to shift attention towards positive thoughts, linked in turn to enhanced wellbeing (Chin and Rickard, 2014; Weinberg and Joseph, 2017), and exercising to music, common in healthier and well listeners too, may provide another way to physically engage with the music. Healthier and well listeners in Survey 2 were also more likely to listen for no reason at all, using music without an explicit intention, suggesting that these participants may be more open and adaptive, and less purposeful, with their listening.

There are further differences in the music listening of healthier and well participants, which suggest that listeners who are well use music listening more flexibly and require less control over the experience. Healthier and well participants were more likely than unwell participants to choose music based on the genre, without looking for a specific piece of music, using music listening more flexibly and seeking to engage through singing, dancing or reflecting on memories. This more adaptable way of listening may explain why healthier and well listeners use music alongside a wider range of activities, including listening as the main activity. They were more likely to report listening to music in shops and in public, on TV or at live performances, in social situations, such as with friends and family, as well as listen to someone else's music suggestions. These findings agree with literature showing that going to live performances is associated with higher wellbeing, and listening in families and peer groups increases social

[1] The healthy and unhealthy listener profiles focus on both health and wellbeing, but are named this way for ease of communication.

cohesion and positive emotions (Boer and Abubakar, 2014; Greasley and Lamont, 2011; Krause et al., 2015; Packer and Ballantyne, 2010; Weinberg and Joseph, 2017). Causation cannot be assumed, however, and these findings suggest that different degrees of listener control may be linked to positive outcomes based on the listeners' health and wellbeing. Healthier and well participants may already feel more in control of their life and, therefore, may experience positive outcomes without requiring high levels of listener control.

This section presented the music listening behaviours linked to higher health and wellbeing. Once more, the healthy listener profile, as seen in Fig. 5.2, is a representation of significant statistical associations and a fictional snapshot of music listening; not *all* healthier and well participants listen to music this way. However, this profile highlights important trends in the listening of healthier and well participants, or during healthier and more well times in the listeners' lives, suggesting factors that may differ between health and wellbeing statuses. This profile presents how music listening may differ depending on health and wellbeing, and change, moving beyond the influence of demographic variables, as these were not found to be as significant. Overall, healthier and well listeners seem to use music listening more flexibly, for a wider range of functions and mainly to enhance positive feelings and situations. They listen in more diverse contexts, including socially and in public, allowing lower listener control, and value familiarity and engagement with the music.

5.2.3 The unhealthy listener

The unhealthy listener profile presents specific music listening behaviours that were linked to lower health and wellbeing, reported through physical and mental health difficulties, negative feelings, and lower Non-Judgement[2], highlighting both differences and similarities with the average and healthy listener profiles. Participants who face health challenges and experience negative feelings, including depression, listen to music similarly to other listeners in certain aspects. Music listening importance, frequency and duration did not differ from the average listener. Indeed, Sakka and Juslin (2018) found no differences in how depressed and non-depressed listeners use music. On the other hand, McFerran (2016) found that young people use music differently depending on their wellbeing, even if using the same music. Therefore, while it is recognised that some music listening aspects don't differ between average, and unhealthy and less well listeners, the distinct music listening behaviours linked to unhealthy and less well listeners found in Survey 2, as highlighted in Fig. 5.3, provide important insight into music listening at less healthy and well times, without implying pathological use of

[2] As explained in Chapter 4, Non-Judgement was statistically linked to experiencing mental and physical health difficulties.

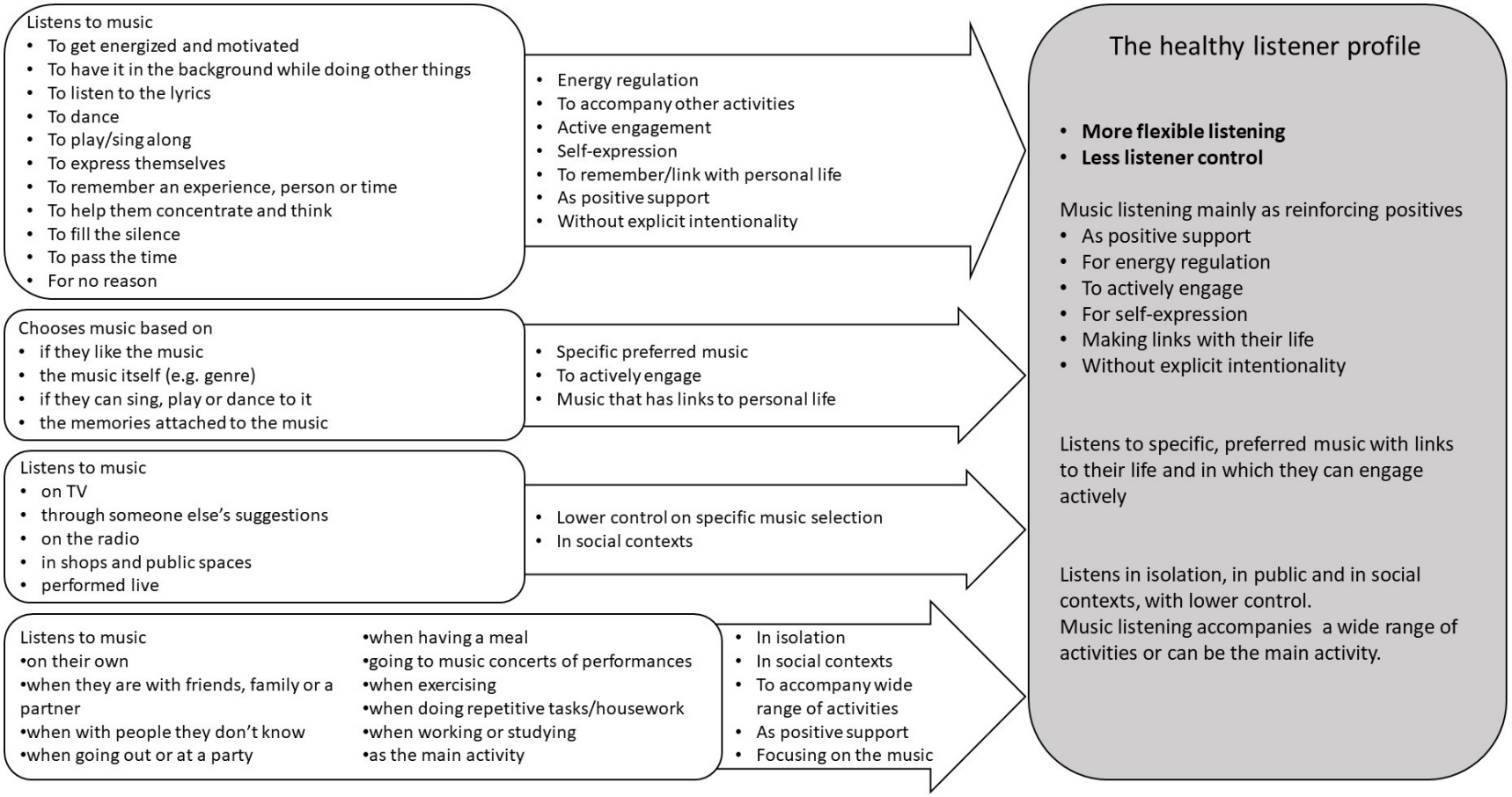

Figure 5.2: The healthy listener profile.

music but rather representing how people use music when feeling unwell.

Unhealthy and less well participants were more likely to listen to music for different reasons to the average listener, focusing more on alleviating negative feelings or situations, for example to reduce anxiety and stress, for distraction and escape, and to cope with problems. The use of music listening for coping or affect-regulation by unhealthy and less well participants has been found in previous research (see Getz et al., 2012; Kuntsche et al., 2016; North, 2010; Randall and Rickard, 2016; Randall et al., 2014; von Georgi et al., 2006). Unhealthy and less well listeners were also more likely to use music listening to help with physical pain and difficulties, and to fulfil social needs such as feeling lonely. It could be that these unhealthy listeners feel a lack of social connection, potentially due to their health challenges, and therefore are using music listening to address this need, unlike other listeners. This could also be the case in the use of music listening to help with symptoms. As these participants do face health challenges, they may be using music listening for consolation and as a "cultural immunogen", to distance themselves from the physical difficulties and focus on coping and recovery (see Hanser et al., 2016; Ruud, 2002; Thayer et al., 1994), while this would not be as necessary for listeners who don't face such difficulties.

Unhealthy and less well listeners were more likely than average listeners to choose what to listen to based on intramusical characteristics, such as genre and tempo, like healthy and well listeners, however their listening is more focused and controlled and less flexible. They engaged in more focused and intentional listening, choosing personal playlists or particular albums and pieces, with higher listener control compared to healthier and well listeners. These findings are different to those reported by Finn and Fancourt (2018) who suggested that self-selection of music is not an important factor when looking at the impact of music listening on biomarkers; selecting the "right" music is highly significant for the unhealthy and less well listeners in the current study. This could be due to the use of music listening for particular purposes that require higher user control, as also found by Greb et al. (2017), or could reflect a more general need to increase control in their lives, as low levels of perceived control, self-efficacy, and competence are associated with depressive symptoms and potentially further health problems (Saarikallio, 2019). According to literature, self-selected music, such as personally curated playlists, can have the greatest positive effects on listeners, highlighting the importance of control and choice when using music to help with negative affect, with music offering ill listeners feelings of achievement, empowerment and self-agency, and helping with pain management (Batt-Rawden, 2010; Batt-Rawden et al., 2005; Chanda and Levitin, 2013; Elvers, 2016; Groarke and Hogan, 2019; Mitchell et al., 2007; Saarikallio, 2017). The need for higher listener control is also reflected in the contexts employed by unhealthy and less well listeners. They listened to music mostly

in isolation, following listening patterns used for solace and consolation found by Hanser et al. (2016), and unhealthy and less well participants reported using music alongside a small range of activities, their music listening being less adaptive than that of their healthier and well counterparts.

A further important difference in the music listening of unhealthy and less well participants was that they were more likely to have been affected negatively by music listening, as also found by McFerran (2016) and Beckmann (2013), suggesting that the risk of negative outcomes may be higher when already facing health difficulties. The potential negative effects of music listening are largely overlooked in relevant research, as discussed in Chapter 2; however, in agreement with the current study's findings, McFerran (2016) highlighted that listening outcomes depend on the individual's current wellbeing. For example, when experiencing negative feelings, listening to music may not achieve the desired results, and listening to music more when depressed may not lead to mood enhancement (see McFerran et al., 2015; Sakka and Juslin, 2018). Proposing that unhealthy and less well listeners are more likely to suffer negative effects than their healthier and well counterparts, may explain why change in music listening behaviours, such as preferences, was also more common for these listeners in the Survey 2 findings, as it could be associated with the difficulties the listeners are facing. This change could be a form of safeguarding or part of event-related change as described by Saarikallio (2010), with listeners being more purposeful and reflective of their listening.

This section presented the music listening behaviours associated with physical and mental health difficulties, and negative feelings. Certain existing literature links particular ways of music listening to exacerbating negative symptoms, for example listening to violent music leading to increased hostility and aggression, rumination, worsening mood, and social isolation (Anderson et al., 2003; Garrido and Schubert, 2015b; McFerran and Saarikallio, 2014; Saarikallio et al., 2015; Garrido and Schubert, 2015a). In agreement with McFerran et al. (2016), however, this research does not infer causation and suggests that music listening may be associated with the listener's wellbeing condition in a potentially reciprocal relationship. The unhealthy listener profile seen in Fig. 5.3 is, again, a product of statistical associations and a snapshot of likely music listening behaviours; not *all* participants with health difficulties listen this way and their health difficulties are not *due* to their music listening. This profile highlights how music listening by participants with health challenges, or during less healthy and well times, may change or differ to that of the average and healthy listener presented above. In contrast to healthy and well listeners, unhealthy and less well participants seem to listen less flexibly, requiring more control over the experience. They listen through controlled mediums, in isolation or in a small number of contexts, accompanying a limited range of activities, and focusing mainly on alleviating negative feelings and situations. They are, furthermore, more likely to be negatively affected compared to healthy and average

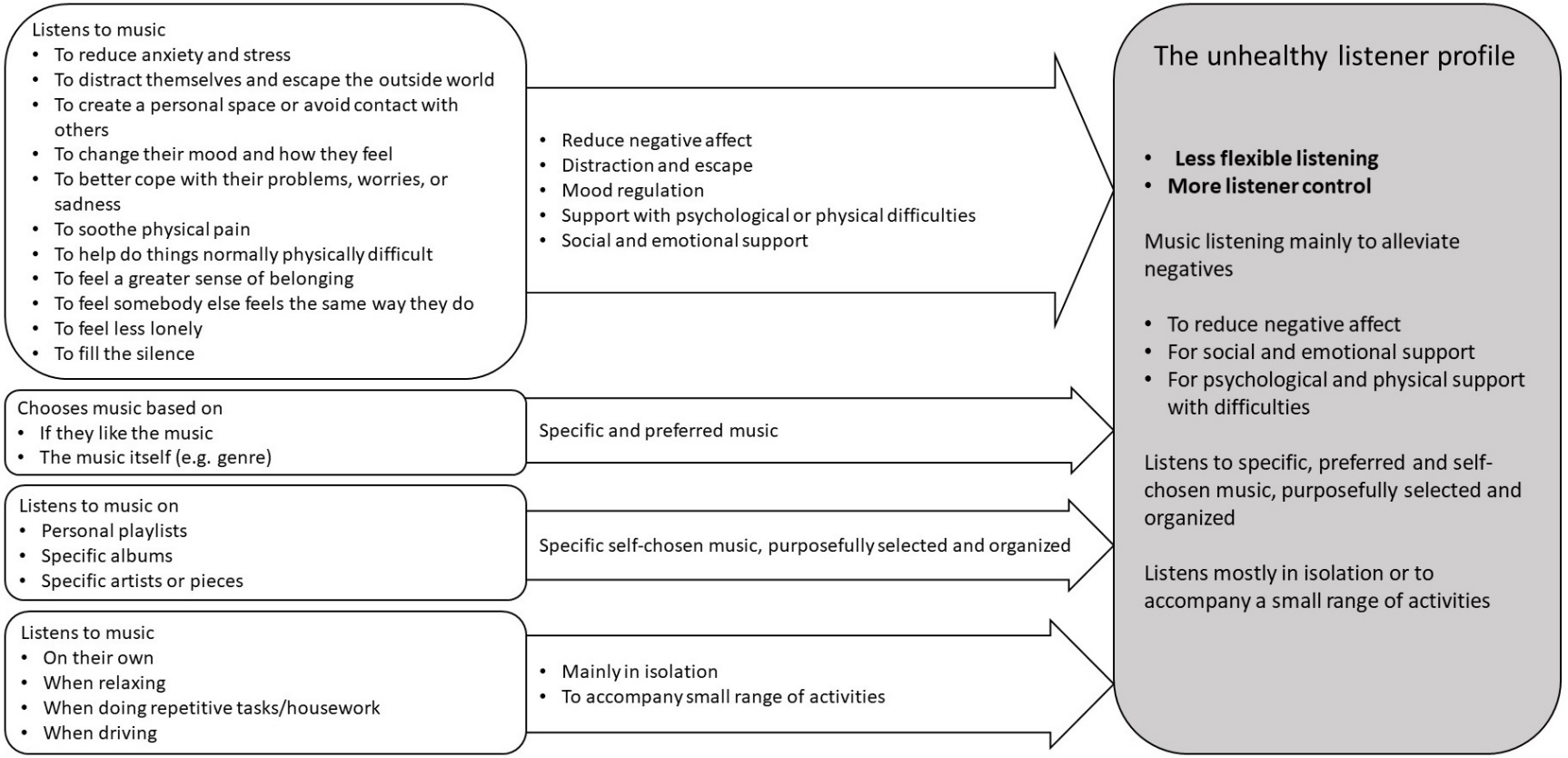

Figure 5.3: The unhealthy listener profile.

listeners, and their music listening is also more likely to change, potentially due to this heightened risk.

5.2.4 Summary

The average, healthy, and unhealthy listener profiles presented above highlight the similarities and differences between listening linked to higher health and wellbeing on the one hand, and health difficulties and negative feelings on the other. They provide insight into how different patterns of music listening may be associated with the listener's existing health and wellbeing, and highlight that, despite having almost unlimited access to music, choice, and diversity nowadays, participants seem to use specific ways of listening at different times. Listeners who are healthier and well reported listening to music more flexibly than average listeners, aiming to enhance existing positive conditions and allowing lower listener control. In contrast, listeners who were facing health difficulties and negative feelings listened to music less flexibly and in a more focused way compared to healthy and well listeners, aiming to alleviate negative conditions while seeking increased control over the experience, potentially due to the higher risk of negative effects. While all listeners are unique and present distinct music listening, these profiles support certain patterns of listening linked to health and wellbeing. These profiles further our understanding of how music listening is used in the context of everyday life, while emphasising the role of extramusical factors in the music listening experience and its outcomes.

5.3 The Virtuous Cycle

Looking at the statistical relationships between music listening behaviours and higher reported health and wellbeing, an important cluster of variables was found, linked through medium and large positive correlations, which is described in this research as the Virtuous Cycle. Participants who were healthier and well reported 1) higher importance of music, 2) higher belief in the positive wellbeing influence of music listening, and 3) successful use of music listening to cope with problems; all three variables linked to higher music listening frequency and duration. This finding highlights that music listening outcomes aren't only influenced by specific music listening behaviours and intramusical characteristics, such as those presented in Section 5.2, challenging the concept of healthy and unhealthy listening suggested in existing literature. Music is not a stimulus which has predictable responses due to the type of music used, and the current findings highlight the importance of further factors. In line with the Survey 2 findings, the importance of music in life has been linked to wellbeing by Krause et al. (2019). While factors similar to the Virtuous Cycle have been inferred in pre-

vious research, however, they have not been addressed directly. For example, it was found that listeners' previous experiences influence their beliefs, expectations and future behaviours; listeners who use music to regulate their mood believe more strongly in its power, and listeners' beliefs in the efficacy of music influences the effectiveness of music for affect regulation (Bandura, 2001; Groarke and Hogan, 2019; Schäfer, 2016; Shifriss et al., 2015). Furthermore, believing in music's affordances is a key motivator for listening in men (de Boise, 2015), and this seems to be the case independently of gender. Those who consider music important in their lives are more likely to see it as a useful coping mechanism and engage with it in everyday life, as also found by von Georgi et al. (2008), and those for whom music has been consistently helpful are more engaged music listeners (Schäfer, 2016).

An important point to be made, however, is that the Virtuous Cycle does not infer causal relationships. Emotions can be outcomes of good health and high wellbeing, rather than causes and participants who are already feeling positive, healthy, and well may be more likely to approach music listening positively and engage more (Leventhal and Patrick-Miller, 2000). The use of music listening, in fact, could be part of a positive and proactive attitude towards wellbeing, more common in healthier and well listeners (Krout, 2007; Wago and Kasahara, 2004). Nonetheless, the Virtuous Cycle aspects were reported higher in healthier and well listeners, whether due to existing higher health and wellbeing or through contributing to the enhancement of wellbeing, and it is an important factor linked to positive listening outcomes and higher engagement with music listening.

The Virtuous Cycle, furthermore, is not linked to demographic characteristics nor most other music listening behaviours apart from frequency and duration of listening. The importance of music, its positive influence on wellbeing, and effective use for coping, are statistically independent of age, nationality and gender, and not linked to listening in particular ways. This suggests that listeners' Virtuous Cycles don't necessarily change by growing older, despite research suggesting that the importance of music decreases or increases with age (see Laukka, 2007). Indeed, de Boise (2016) argued that the importance of music overall does not change over time, rather its importance within specific types of social interaction.

These findings, thus, confirm and take further existing research, through the statistical associations found in the current data. The importance of the Virtuous Cycle is that it highlights the role of the listener's mind-frame towards music listening rather than demographics or particular ways of music listening. However, the question remains about what defines the listeners' Virtuous Cycle, as it is not an individual nor contextual factor per se. If it is not linked to maturity, education, culture, or a specific use of music listening, how is it developed and influenced? It is difficult, if not impossible, to discover

where this cycle begins, especially through statistical association. This becomes even more important given the potential negative influence of an opposite approach towards music listening, how a "vicious cycle" may begin and affect listening outcomes.

In sum, the Virtuous Cycle is a cluster of three variables with an important positive role in the relationship between music listening and health and wellbeing, linked to higher engagement and health and wellbeing, independently of demographics and specific ways of listening. Emphasising the importance of factors beyond the music itself, this finding confirms the importance of the listener's past experience with music, their belief in it as a positive influence and the importance that it holds in their life. These aspects were further explored in the interviews, discussed in Chapter 7.

5.4 Music listening for wellbeing: A mediated relationship

Both Survey 1 and 2 findings shed light on the statistical relationships between music listening behaviours and health and wellbeing aspects, highlighting both the direct and indirect relationships between these variables. Apart from the direct statistical relationships discussed in the listener profiles, indirect relationships were also found. As seen in Fig. 5.4 for example, in Survey 2 subjective health was linked to music listening frequency and duration through the importance of music: listeners who listened more frequently and for longer reported that music is more important in their life, and those participants were also more likely to report higher health measures. Similarly, in Survey 1, music listening frequency was linked to health through exercise frequency.

Finding these indirect relationships between music listening behaviours and health and wellbeing aspects highlights how music listening is linked to wellbeing in many ways, both direct and indirect, the relationship influenced by a multitude of factors. This emphasises that music listening for wellbeing should not be approached unilaterally and out of the context of listeners' lives, as the wellbeing role of music listening also functions through other activities and factors, in turn linked to health and wellbeing through mediated relationships.

The survey findings discussed in this chapter propose that the relationship between music listening and health and wellbeing is far from dependent on specific music listening behaviours alone. The mediated nature of this relationship has indeed been acknowledged and explored in existing research. For example, different music listening outcomes have been linked to the use of music listening for particular functions, cognitive reappraisal associated with benefits and expressive suppression with negative impacts, independently of how and what music was listened to (Chin and Rickard, 2014).

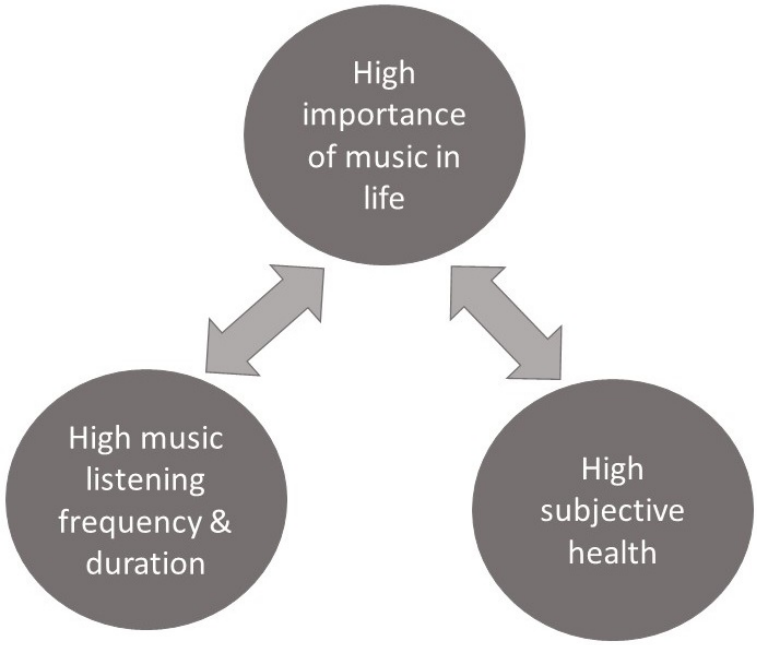

Figure 5.4: Example of an indirect relationship between music listening behaviours and health.

Furthermore, the relationship between music and stress is mediated by experiencing positive emotions, and listening outcomes are influenced by the listener's previous relationships with the music and their current wellbeing (Helsing, 2012; McFerran, 2016). Musical experiences and their outcomes are influenced by the music, the listener, and the situation and context, while even physiological responses may differ due to extra-musical factors, such as the listener's mind-frame, which is seen in the Virtuous Cycle found in the current research (see Groarke and Hogan, 2018; Hargreaves, 2012; Howlin et al., 2018).

The current research suggests that the relationship between music listening and health and wellbeing is mediated by two overarching factors 1) the specific music listening behaviours, including what activities they may be doing alongside, and 2) the Virtuous Cycle, representing the listener's mind-frame towards music listening and their experience. This highlights a particular approach towards music listening for wellbeing. Music listening is widely used to address a wide range of needs, and can indeed be used precisely and reliably, however it is not a hard-and-fast commodity like water as suggested by Maloney (2017); it could be said that drinking water will satiate one's thirst no matter what they believe. On the other hand, music listening outcomes seem to depend on the listener's mind-frame, on their Virtuous Cycle: how important music is in their life, if they believe it is a positive wellbeing influence, and how much it's helped them cope in the past. The listeners' individual differences, such as personality traits, their existing and past relationships with music, and their current difficulties and wellbeing,

influence the music listening experience and its outcomes (Chamorro-Premuzic et al., 2009; Greenwood and Long, 2009; ter Bogt et al., 2011).

This mediation is further supported by the listeners' accounts in Survey 2 of how music has been either helpful or unhelpful for them in equivalent situations, such as break-ups or when mourning. The participants highlighted the importance of appropriate music listening, and music listening was discussed as a tool to be used with precision and expertise, but also one with potential side-effects. Beyond the specific music listening, furthermore, the participants presented different points of the Virtuous Cycle, with distinct mind-frames and different past experiences, and obtained different outcomes. For example, some listeners explained how certain music will always help instantly, keeping them "in an optimal state to deal with daily problems", while on the other hand others emphasised that problems must be overcome "by yourself" and that music listening "accomplishes nothing of substance".

Once more, causal relationships are not inferred when discussing the mediation in this relationship. The two mediating elements, the specific music listening behaviours and the Virtuous Cycle, are influenced and in turn influence the relationship between music listening and health and wellbeing, while also in dialogue. The Virtuous Cycle is linked to music listening frequency and duration, and specific music listening behaviours that have had positive results could influence a listener's Virtuous Cycle. This is especially evident when looking at the healthy and unhealthy listener profiles; while these profiles are useful to highlight statistical patterns, they are not a recipe or a recommendation. These findings support that no music listening behaviours alone are linked to higher health and wellbeing. Especially when focusing on health and wellbeing, and potentially vulnerable populations, findings should not follow a nomothetic approach and must be contextualised rather than generalised, as suggested by McFerran (2016). Indeed, successful music listening for wellbeing is different for each listener and at different times. The listener's Virtuous Cycle may change over time or following specific experiences, as can their music listening practices, this change in turn linked to listening outcomes and health and wellbeing.

The mediated nature of the relationship between music listening and health and wellbeing found in the current research highlights, once more, the importance of factors beyond specific ways of music listening. The role of the Virtuous Cycle, the listener's mind-frame, could suggest that some listeners are more equipped to use music listening in their everyday life than others, independently of how they listen to music, as suggested by von Georgi et al. (2008), however this may be the case at particular times during one's life as well. The mediated relationship between music listening and health and wellbeing was further explored in the series of interviews conducted, aiming to understand how it is perceived and used by listeners in their everyday life.

5.5 Summary

This chapter discussed the relationship between music listening and health and wellbeing, based on statistically significant survey findings. Links between specific music listening practices and health and wellbeing were presented through the healthy and unhealthy listener profiles, with the average listener profile describing most common music listening behaviours. Certain differences in music listening were linked to demographics, however, these do not explain the extent of individual differences nor the reported change in music listening behaviours over time. The current research proposes that music listening may change based on the listener's wellbeing status, taking forward findings that link mental health states to differences in perceived emotions in music, and suggesting change in the impact of music listening across the wellbeing continuum, music influencing listeners differently when well or unwell (McFerran, 2016; Saarikallio, 2017). The findings presented in this chapter propose that the listener's overall health and wellbeing status may be linked to different music listening, looking at listeners as developing and not static. Healthier and well listeners, or those at healthier and well times of their lives, use music for a wider range of reasons, mainly aiming to reinforce existing positive feelings and situations. Their listening is more flexible and adaptable, taking place in various contexts including social and in public and requiring less listener control. They may even listen to music without an explicit purpose, and they focus on intramusical characteristics, familiarity, and engagement with the music. On the other hand, unhealthy and less well listeners, or those who are facing health difficulties and negative feelings at the time, use music mainly to alleviate negative feelings or situations and to improve social connection. They require more listener control and choose particular pieces and artists, potentially due to the higher likelihood of negative side-effects, and are more likely to report change in their listening over time. Furthermore, their music listening is more focused and less flexible, mainly in isolation accompanying a limited range of activities.

The role of further factors was then discussed, focusing on the Virtuous Cycle and the mediated nature of the relationship between music listening and health and wellbeing. The Virtuous Cycle, a cluster of linked variables in the Survey 2 findings, highlights how the listener's mind-frame and past experiences of music listening can play an important role independently of demographics. Listeners who believe that music is important, that music listening is a positive influence, and who have used it successfully to cope, listen to music more frequently and for longer and report being healthier and more well. The reciprocal relationship between music listening and health and wellbeing is mediated through specific music listening behaviours and the Virtuous Cycle. Putting the listener profiles in context, this section proposes that, while specific music listening behaviours may be linked statistically to health and wellbeing directly, the listener's mind-frame

and approach towards listening is also an important factor in this relationship.

Overall, the surveys highlighted that the use and outcomes of music listening differ between individuals and contexts, linked to their Virtuous Cycle and health and well-being status, stressing the need to take such further factors into consideration. It would be simplistic to propose that listening to music in a certain way will help every listener and at all times, as music is personal and cannot be prescribed like generalised medicine, as Sloboda (2005) argues. Music listening is both informed by and shapes our lives, our wellbeing, and ultimately, who we are; it is not a panacea, but part of a complex web of relationships. To obtain further insight, the following chapter discusses the design, data collection, and data analysis process followed in the interviews. It presents the interview findings, focusing on the listeners' personal lived experiences of music listening and health and wellbeing in their everyday lives.

Chapter 6

The interviews: The lived experience of music listening and health and wellbeing

6.1 Introduction

The main qualitative data collection in this research took place through 20 semi-structured online interviews in a diverse international sample. They explored the relationship between music listening and health and wellbeing in the listeners' lives, and how this relationship is understood and used. The data collected provided further insight into the listeners' individual experiences, and also allowed to triangulate and enrich the quantitative data collected by Surveys 1 and 2. This chapter presents the interview design, data collection and data analysis process, and introduces the interview participants. The main interview findings are then presented through eight subordinate and four superordinate themes, using quotes from the interviews.

6.2 Methodology

6.2.1 Interview design

The interviews were semi-structured and meant to last between 1-2 hours. The interview protocol was designed to further explore Survey 1 and 2 findings, as well as discover new themes and factors that are significant for the listeners. The questions were devised for the purpose of these interviews, and sought to focus equally on the positive and negative relationship between music listening and health and wellbeing,

recognising that participants may need to be asked directly about the times music has been unhelpful for them, as pointed out by McFerran and Saarikallio (2014). The interview questions, as seen in Appendix D, focused on:

- the participants' lifestyles and health and wellbeing[1],
- the participants' engagement with music and music listening, and
- the relationship between music listening and health and wellbeing in the participants' lives, including positive and negative effects of music listening, and the purposeful use of music listening for wellbeing.

Through these questions, the participants were able to freely explore their views, experiences, and any sensitive issues at their own speed. Opening the interviews through questions about the participants' motivation and expectations for this research helped establish rapport, and there was also a brief wrap-up section at the end. After obtaining ethical clearance, the interview protocol, the interview process, and the short pre-interview survey were piloted by two colleagues within the field of Music Psychology and a further acquaintance with no prior knowledge of the area, in order to practice my interview technique, test the interview setup for any technical issues, and ensure clarity and that the questions were understood as intended for the purposes of this research. It was important to ensure that the interview allowed for flexibility and self-reflection, and it was essential to ensure no relevant points were neglected. Feedback on these pilot interviews resulted in significant changes in the protocol structure and questions.

6.2.2 Data collection

The 20 interview participants were recruited through *Prolific*, as discussed in Chapter 2. The interview task was distributed to *Prolific* users gradually, using the screening function to manage recruitment. This allowed control over the participant demographics, maintaining a balance between gender and age groups, as well as a diversity in nationality and other features, such as specific health difficulties. The filters used throughout this process were age (18+), use of *Skype*, and fluency in English. Other filters were altered or added gradually to support diversity in the participant group, and the decisions were informed by the number of eligible participants calculated by *Prolific*. The different filters used during the recruitment process can be found in Appendix G.

The participants were informed that the task required up to two hours, and they expressed their interest for the study and provided consent by completing a short pre-

[1]Health and wellbeing were explored overall, but the interviews also focused on physical and mental health difficulties specifically, diagnoses and the participants' healthcare experiences. Due to this, the interview findings include discussion of health difficulties specifically, as well as health and wellbeing overall.

interview survey, seen in Appendix H. The survey included questions on demographics, music engagement, and health and wellbeing, as well as questions on the participants' time-zone, preferred dates and times, and *Skype* ID. A detailed consent form was also attached, explaining that they were free to use their real name or a pseudonym.

At the start of each interview, the aim and scope of this research were described and oral consent was obtained. The participant recruitment process began on 20/6/2017 22:18 and was completed on 30/7/2017 23:02, with the 20 interviews taking place between 24/6/2017 and 1/8/2017. All interviews lasted less than two hours and were conducted over *Skype*. Both audio and video were recorded throughout the interview, using a Zoom H6 audio recorder and *OBS* software respectively.

6.2.3 Data analysis

6.2.3.1 Transcription

I completed all transcription myself, while I was also the interviewer and undertook the data analysis process, in order to obtain a holistic understanding of the data (Chafe, 1995). The process of transcription, and the transcripts themselves, were approached as "artefacts in need of thoughtful consideration" (Kowal and O'Connell, 2014, p. 2) and I transcribed all interviews verbatim so that they could be studied and analysed in detail (Bailey, 2008). The choice of transcription method was driven by the specific research purposes and decisions were made on the level of required detail, with only pauses, emphasis, and certain paralinguistic or non-verbal behaviours, such as laughter, included in the transcripts (Kowal and O'Connell, 2014). Transcription followed the key found in Appendix I, adapted from MacDonald et al. (2002, p. 178). Recognising that transcripts are not neutral records but interpretations of data (Bailey, 2008), great effort was made for the transcripts to be a faithful representation of oral communication, using the basic free version of *Express Scribe* v 6.00 by NCH Software. The transcripts were then formatted using *Microsoft Word*, adding line numbers to support the analysis process (Lacey and Luff, 2007). The interviews were transcribed in the order they took place, as a first point of close observation through repeated careful listening, increasing familiarity with the data and gaining an intimate knowledge of the script (Bailey, 2008; Oakland, 2010; Robson and McCartan, 2016).

6.2.3.2 Framework analysis

The interview data were analysed using Framework analysis, according to the aims and context of this research. Framework analysis was developed in the 1980s in the context of applied qualitative research, by Ritchie and Spencer (1994). It is commonly used in social and health sciences and increasingly in various disciplines, including psychology,

usually for the analysis of semi-structured interview transcripts, as in the case of this research (Gale et al., 2013a; Parkinson et al., 2016; Gale et al., 2013b).

Framework analysis is similar to thematic analysis as described by Braun and Clarke (2006) but has certain differences; thematic analysis has been criticised for lacking depth and transparency regarding theme development, as well as resulting fragmentation of data (Smith and Firth, 2011). Framework analysis was chosen in order to address these issues, with an emphasis on transparency and explicit links between the analytical stages (Smith and Firth, 2011). It is rigorous but flexible, pragmatic, and not bound by a particular epistemological position, which is appropriate given the pragmatic mixed-methods approach of this research (Gale et al., 2013a). While it is highly systematic and methodical, Framework analysis is dynamic and open to development throughout the analytical process, and is best suited for research within a limited time-frame, which was ideal in this case (Srivastava and Thomson, 2009). Furthermore, Framework analysis is more structured and explicit than other qualitative analysis processes, informed by a priori reasoning and guided by emergent data driven themes[2], allowing to incorporate the researcher's focus and highlight participant-driven themes (Parkinson et al., 2016; Pope et al., 2000).

The process of Framework analysis comprises of the following five distinct stages undertaken in a linear fashion (Parkinson et al., 2016; Pope et al., 2000; Ritchie and Spencer, 1994), as seen in Table 6.1 and described below:

Table 6.1: The five stages of Framework analysis.

1	Familiarisation	Transcription and immersion in the raw data
2	Identifying a thematic framework	Development of initial coding framework, identification of key issues, concepts, and themes
3	Indexing	Application of the thematic framework to the data
4	Charting	Chart creation using headings from the thematic framework
5	Mapping and interpretation	Search for patterns, associations, concepts, and explanations in the data

1. **Familiarisation**: The familiarisation process is essential when finding one's way around a large body of data in the later analytical stages (Gale et al., 2013a). For familiarisation, I read over all the transcripts fully, underlined interesting segments of text and took notes on transcript margins; the left-hand margin was used to describe the content of each section with a brief label, for example "first music listening experience", and the right-hand margin was used to summarise

[2]In this text I have used the term "themes", as used in Ritchie and Spencer (1994), instead of "categories" as used in Gale et al. (2013a).

the main points and record more detailed notes, ideas, and patterns in the data, or questions to keep in mind. The familiarisation process focused solely on the data, not governed by the research questions, and through this I obtained a holistic sense of what the participants were saying.

2. **Identifying a thematic framework**: This step recognised emerging themes in the dataset, creating several iterations of the framework. It aimed to organise the data in a meaningful way to facilitate analysis, informed both by the research questions and aims, and the emergent issues carried over from the familiarisation process (Parkinson et al., 2016). The key concepts and themes formed the basis of a thematic framework which was used to filter and classify the data (Ritchie and Spencer, 1994). In practice, I went through the transcripts using post-it notes to highlight important themes that were discussed, for example "precision" or "risk". Drawing together these themes, a framework was developed. This process also included going through the transcripts to ensure that my understanding had reached "saturation" (Parkinson et al., 2016, p. 123).

3. **Indexing**: In this stage, I worked through the transcripts, deciding which theme the excerpts should be assigned to. It is important to highlight that certain passages were indexed under more than one theme, which complies with the principles of the method as discussed by Parkinson et al. (2016), with the data telling something important about several topics of interest. Framework analysis requires openness towards assigning material to multiple locations, as a passage may be relevant to two different themes (Ritchie et al., 2003). Indexing the data under the framework was a thoughtful activity, gradually refining the descriptions and boundaries of the themes, and constantly checking the validity of the framework based on how it answers the research questions. This process was conducted on the transcript hard copies, using coloured pens to highlight meaningful passages.

4. **Charting**: *Microsoft Office Excel 2016* software was used to create a chart arranging the coded data by themes (Parkinson et al., 2016; Srivastava and Thomson, 2009). The matrix comprised of one theme per column, with the cells representing data points. All relevant data was then inputted into the framework in their original form. I went through each transcript chronologically, as this supported understanding the individual cases and identifying relationships between themes across the data (Ritchie et al., 2003). The data were edited to form concise and clear excerpts, retaining their context and language, and the voice of the respondent (Gale et al., 2013a; Ritchie et al., 2003). At this point, basic corrections in regard to the English language were made to enhance readability, as for many participants English was a second or third language. The transcript page and line number were noted alongside all data points, creating a link between edited

and unedited "raw" data, allowing to easily refer back to original transcripts for clarification and cross-checking (Lacey and Luff, 2007), the charts acting like a "window into the data set" (Ritchie et al., 2003, p. 213).

5. **Mapping and interpretation**: This final stage of analysis aimed to understand the data, pulling together key characteristics and interpreting the dataset as a whole (Parkinson et al., 2016). The process began by further refining the descriptions of the themes and developing superordinate themes. I then went back to the data to select which excerpts would be most appropriate to discuss the themes in this thesis, while highlighting the participants' unique lived experiences, looking at differences or similarities, and aiming to echo their true attitudes, beliefs, and values (Srivastava and Thomson, 2009).

6.2.4 The participants

Online interviews via *Skype* were used in order to access a diverse and international participant sample, and this was further supported through the use of appropriate filters on *Prolific*. The participant sample had a good gender[3] and age balance, with participants from 11 nationalities. As this research focused on health and wellbeing, I sought to interview participants with a range of health challenges, however, most of the interview participants faced significant health difficulties. While this must be noted, the diversity of their health challenges and different lifestyles support the relevance of the collected data. As presented in Table 6.2, the interview participants were indeed very different people representing diverse lifestyles.

The following sections present the main interview findings.

6.3 Main findings: Music listening and health and wellbeing in the listeners' lives

6.3.1 Music listening for wellbeing: Eight subordinate themes

The eight subordinate themes highlight different aspects of music listening for wellbeing, its nature, development, use and outcomes, presenting important points that should be taken into account regarding music listening for wellbeing.

1. Dynamic music listening
2. Variability in response

[3]The use of pronouns throughout this thesis is based on the participants' preferences and self-reported gender.

Table 6.2: The interview participants - Demographics and health difficulties.

Gender	Number of participants
Male	8
Female	10
Non-binary	2
Sexuality	**Number of participants**
Heterosexual	10
Other	4
Not disclosed	6
Age	**Number of participants**
18-24	4
25-34	7
35-44	5
45-54	4
Nationality and location	
11 nationalities:	Italy, Denmark, UK, USA, Poland, Latvia, Portugal, Greece, Estonia, Hungary, Nigeria
9 locations	
Different nationality to current location	3
Education	**Number of participants**
Primary School	1
Secondary School	7
Undergraduate Degree	4
Postgraduate Degree	8
Health and wellbeing difficulties	
Physical health	**Pain**: period pains, joint pain, headaches. **Chronic**: chronic pain, dyspraxia, scoliosis, cancer, hidradenitis suppurativa, chronic urticaria. **Other**: birth control complications, psoriasis, hospitalisation, high blood pressure, diabetes, breathing problems, fatigue, insomnia.
Mental health	Anxiety, social anxiety, depression, stress, mild bipolar, depression, PTSD, panic/anxiety attacks, suicidal tendencies.
Other	Near fatal accident, Asperger's Syndrome, sensory processing disorders, traumatic experience, slight cognitive delay, experienced homelessness, caring for disabled family member.
No reported health challenges	1 participant

3. Side-effects and risk
4. A precision tool for health and wellbeing

    Self-prescription

    No Music Moments
5. Learning journeys
6. Fingerprints
7. Beyond music
8. MY Music

6.3.1.1 Dynamic music listening: It's not just listening

The *dynamic music listening* theme highlights that music listening is not "just" listening, and participants engage with it differently through other actions and processes that enhance and indicate positive outcomes. These processes are not simply activities taking place in parallel, but an essential and inextricable aspect of music listening, that should, therefore, be taken into account when considering music listening for wellbeing. Music listening was discussed by the participants as dynamic and multimodal, and these aspects were often unique to each specific listener. Examples of dynamic aspects of music listening discussed by the participants were singing, movement and physical actions, cognitive and psychological processes, and internal listening.

Singing

Singing is part of music listening for certain participants, allowing deeper engagement with the music, and associated with positive outcomes. For Luciana and Susanna, for example, singing along while listening to music helps them manage their anger, with Luciana singing to "get out the bad energy". Singing can also enhance and indicate desired positive outcomes. For Samantha and Susanna, singing along tells them that the music is helping; "when the music is working, I turn it up and I start singing along" Samantha said; if she isn't singing then the music is not helping. Singing can also allow deeper engagement with the music, as Cala explained "I like singing along, making noise with it, over it, together, (. . .) because I can actively participate in the song itself, taking me away from my troubles". Gwen vividly described a time when singing along to music increased its effectiveness through allowing them to engage more deeply:

> I had a doctor's appointment directly after the incident that caused my Post-Traumatic Stress Disorder and (. . .) I was just distraught. I was a mess, I was sobbing, and I was singing, and it was the singing that gave me the energy to get to the end of that appointment. (Gwen)

For these participants, singing is a way to further engage with the music and enhance its positive effects. For some participants, however, singing is inextricable from listening. Annie, for example, *always* sings along, otherwise she isn't enjoying the music. For Cala singing and listening to music are inseparable, as are their effects. "Since music is tied so much to singing for me, I don't know whether it's actually listening to the music or singing along to the music that I choose to do when I want to feel better", they explained. However, when they can't or shouldn't sing along, they'd rather not listen to music, as not being able to sing is restricting and makes the experience unpleasant. For this reason, listening to music in public can have negative effects as they explained:

> When I'm listening to a song that I like, and I don't want to sing along because someone might find it rude (...) it's an annoying urge. (...) Listening to music can be associated with repression. (...) Not being able to sing when I want to, (...) I usually end up being more silent than I would be otherwise (...). If I feel my singing is not welcome (...) my words also jar up. (Cala)

Movement and physical aspects

A further dynamic aspect of music listening for certain participants was movement and physical actions. Like singing, movement can enhance or indicate positive outcomes. When Annie, Thomas, Mario, and Samantha move along to the music it is an indication that it's working, "if I'm shaking my head and I'm moving my body, I'm like, yes, it is (working)!", Thomas explained. Vaia, furthermore, described that listening to music helps because it makes her want to "dance and usually the dance improves my feelings". Once more, it's not the movement alone but its combination with music listening that has the desired effects.

Further physical actions were also discussed as part of music listening. Chris and Alessandro get goose bumps when listening to specific music that holds certain meaning for them; it's an expected part of particular music that helps their mood, as Chris said "it's a refreshing nice feeling (...) and can always have a chance at helping my mood, (...) coming out of a song like that feeling better than I went in".

The embodied aspect of music listening, however, is not always positive. Gwen explained that it can have both a positive or negative impact depending on how they are feeling that day. They remembered a time when starting new medication which helped with their chronic pain, saying:

> Music, especially when you're listening to it loud, has a way of moving through your body; you can feel the vibrations, and allowing the music to move through me and noticing the physical differences in my body in that moment was very difficult. (Gwen)

Cognitive and psychological aspects

Cognitive and psychological aspects discussed by the participants as dynamic parts of music listening regarded specific focus during music listening, for example communication or self-reflection, and influenced its outcomes. Certain participants listen to music as a form of communication, focusing on the music's "message" and interacting with it. Samantha listens to music especially because "it's speaking" to her, and while listening she puts herself in the character's shoes to feel what they are feeling, becoming part of the music and its story. Alessandro and Mario focus on the message hidden in the lyrics, seeking to find authenticity and how it relates to their lives in order to engage with the music. Alessandro, furthermore, described how the message in *Daddy* by Korn changed how he feels when listening to it:

> At first, I didn't like it, but (...) after I read the story about it, I liked it more, (...) knowing the story behind it and that it's the real story about the singer and his childhood, and that he actually cried in the recording, (...) so, it's authentic. (Alessandro)

Apart from communicating with the music or artist, certain participants discussed how listening to music involves self-reflection. Alessandro enters a trance-like state when listening to specific music which he really enjoys, like *Parabol* by Tool, increasing his enjoyment. Gwen also finds that music listening can be combined with self-reflection and uses it intentionally as part of their self-care. They explained how certain music helps them recognise "the state that my body is in, (...) lets me sit down, listen to something and experience my body, (...) notice if I'm having any unusual aches or pain".

Internal music listening

Internal music listening, both of existing music and creating new pieces, was a highly important aspect for one participant. For Miguel, internal listening is always present, accompanying and changing all music he listens to. This influences his music listening choices and their impact and can enhance pleasure or be frustrating. He said "I have all of this music in my brain, always, 24 hours a day. Since I was a little boy" and he therefore sometimes listens to music to "exorcise it". He also explained that he intentionally uses internal listening when the music is "really asking for some changes". This internal music listening is an inextricable element of all music listening for Miguel, and while it can be frustrating, he explained how it can also be helpful by providing support in certain situations, such as the last time he went through a surgical procedure:

> I had four or five songs that couldn't leave my mind. The *Gnossiennes* by Satie! I was quite lonely in the hospital and (...) I think my brain formulated the songs because of the state that I was in. If I need to listen

> to music and can't, my brain makes the music! (Miguel)

Whether the participants sing, move, communicate, reflect, or create internal music as part of their listening, they discussed these aspects as expected and inseparable dynamic parts of music listening, allowing them to engage more deeply and enhancing their wellbeing. These processes can differ between listeners and can influence listening outcomes. Even if these processes seem secondary or incidental, these "other ways of listening" highlight the multimodal nature of music listening and hold an important role in the context of health and wellbeing.

6.3.1.2 Variability in response: The same music isn't always helpful even for the same listener

The *variability in response* theme highlights that music can influence even the same listener differently. It is understood that the impact of music can vary between listeners; this theme takes this further, addressing the variability in response to music listening in the same listener. It highlights the importance of context and other factors beyond individuality, supporting that the nature and outcomes of music listening are not structural, static, and constant, but reflexive and contextual. This is particularly important in music listening for wellbeing, as the same music might have different effects even on the same listener, and cannot be guaranteed to be helpful. This variability, according to the participants, was linked to the listener's emotions at the time, specific use and intent, and important life events.

The listener's existing emotions

Variability in response, according to the participants, was linked to their emotions and how they felt at the time. For example, certain music can make Samantha feel amazing one day and completely different another day, depending on her emotions, and then she:

> Just can't do that song or that artist that day, 'cause it'll take me to a place where I don't want to be in my head. This happens because (...) there are good memories attached, and there are bad memories attached, and if (...) I'm in a bad mood it (the music) might play off the negative, but if I'm in an upbeat happier mood it will play off the positive. (Samantha)

Similarly, Vaia knows that there are four or six songs that sometimes make her happy and sometimes make her cry, so she doesn't listen to them. Based on the listener's existing emotions, the music listening experience may end up being unhelpful rather than positive, without the listener expecting or controlling it. This has important implications as listeners may base their music listening for wellbeing on past experiences, but their expectations may not be met due to factors beyond their control, as highlighted

by Chris, who said "I see a certain thing in a song and play the song expecting to fulfil that need, and because something outside my control is doing something differently, it's just not what I need at the time".

Use and intent

The use of certain music with specific intentions, in difficult situations, or for an extended time can also affect the listening outcomes according to some participants, weakening its benefits and turning specific music from positive to neutral or even negative. Listeners may "grow out" of particular music, as Lina suggested, and they may find other music that fulfils their needs. This was the case for Vaia, as the effect of certain music changed when she discovered other music she feels more connected to. She explained "I was listening to pop and rock music, they were happy and uplifting and with a quick tempo, (...) and it improved my feelings, but now (that I've discovered jazz piano music) it does not". Cala explained how songs they've outgrown now have a negative impact, saying "some of the songs that I used to listen to will just annoy me these days, I don't want to listen to them anymore because I'm different".

In fact, certain participants suggested that the effectiveness of most music may have an expiry date. Chris suggested that music works "for a certain amount of time", and Gwen argued that "we can definitely become immune to things that on a day to day basis we use frequently. (...) Music can just become stale, it's like you've listened to it too much, it doesn't evoke the same reaction". Amanda also said that "if I listen too much to a song on repeat for like a month, it becomes kinda shit".

According to the participants, this can especially be the case with music they used in difficult situations. Gwen explained that "we can put intentions into music and (...) sometimes that intention can be warped by an experience we've had, it can become associated with something that's no longer pleasant". Amanda expressed her awareness of this risk as well, directly affecting how she uses music listening for wellbeing:

> I don't want to risk disliking a song that I previously liked (...) because I've listened to it at a bad time. (...) It just doesn't help (...), it just reminds me on repeat of that sad time. (Amanda)

Susanna expressed similar feelings reflecting on a highly traumatic event when certain music helped her, but now she cannot listen to it anymore. She said that those songs and that singer "were friends" to her at that moment, but now "even remembering that music makes me cry like a baby. That part of my life was very important for me, but (...) it's the past".

Important life events

Participants reported change in the effects of music listening linked to important life

events, especially with music associated with particular activities or people in their lives. Certain events in life might make specific music more relatable, allowing for deeper engagement, and turning music that previously had a negative or neutral effect into being helpful. For example, Miguel discovered a connection with *fado* music when he lost his parents as he explained: "everyone I love is dead basically, and that has really changed my life. (...) Music that I used to consider completely corny and old guys' music, now I listen to it and I understand it".

On the other hand, however, in most cases participants discussed certain music becoming negative following specific events. Annie, for example, can't listen to her all-time favourite song, *Manic Monday*, after her mother's passing, saying "cause she's not around anymore, I think to myself, I wish that song would go away". Beth expressed similar feelings about *Lady* by Kenny Rogers, which she associates with an ex-partner, saying "I would break down and cry because that song was (playing) the night we had our last dance with my boyfriend that died". In these instances, music that had a greatly positive impact is now highly negative, which suggests that nostalgia and association with memories can play a negative role in the context of music listening for wellbeing.

This change described, however, may not be for forever, and while certain music can go from having a positive impact to making listeners feel worse, it may return to being positive, as Annie suggested. She explained that some music associated with her mother has indeed gotten easier to listen to with time, saying "sometimes before I put the CD in I think some of these songs will hit a nerve, but then you try to push it aside and try to think of the happiness! 'Cause I don't want to not listen to her (Eva Cassidy) again". However, this is not always the case. Annie said she will never be able to listen to Elvis again, her mother's favourite artist, as "it feels like walking on broken glass". This becomes particularly difficult for Annie when listening to music in public, as she explained:

> It brings my mood right down! I'd rather walk out of the room and go and sit somewhere out of the way where I can hardly hear him. (...) I love Elvis Presley, I know literally *all* his songs, but he just makes me feel sad now [emphasis added]. (Annie)

These accounts highlighted that the effects of certain music may change even in the same listener. The listeners' existing emotions, the past use of this music, or its associations can influence its outcomes, and if certain music is used extensively to help then it could stop working. This theme emphasises that there is no guarantee that specific music will be helpful, even for the same listener, with participants acknowledging this change and acting accordingly, and highlights the influence of context on listening, outcomes differing not only between listeners but within listeners as well.

6.3.1.3 Side-effects and risk: When listening to music is harmful

The *side-effects and risk* theme highlights that music listening can have negative effects and carry risk. Once more, these effects differed between participants and were linked to specific situations or certain music. The potential negative effects of music listening were mainly discussed in terms of preference and control, specific music use and associations, and the listeners' existing emotions. Negative effects, furthermore, ranged from minor to detrimental, with participants having developed safeguarding strategies to mitigate the risk.

Preference and control

For some participants, negative effects were linked to preference and control over the listening experience. Music listening is negative for Mario and Alessandro if they don't like its meaning, while Samantha feels similarly about her boyfriend's chosen music, a genre she called "nerd rap"; she can't relate to it even though she really wants to, so it makes her sad and angry. She said "I would love to be able to relate the same way that he does, or (...) just enough to speak to him about it, but I can't". Lina explained that she would be upset if she was forced to listen to something she doesn't enjoy or know, saying "if I visited someone who plays a particular type of music that I don't really enjoy, (...) I would not be feeling that comfortable in that environment, (...) I would feel like I don't belong there". However, while listening to music outside one's preference and control can be negative for some participants, other factors are also important, as otherwise there would be no risk or variability in self-chosen music.

Music use and associations

Negative effects were also linked to certain music, its content, and the memories attached to it, as well as how it is used. For example, Miguel described how as a teenager he used music as a form of rumination with negative effects on his mood. He said:

> When I was younger and into the dark Manchester sound, Joy Division and Bauhaus, sometimes we only listened to that, and it's not normal. (...) We forced ourselves to feel down. (...) 20 years of my life (...) I listened to it 365 days a year. (Miguel)

Apart from using music in a particular way, the associations linked to music can bring back negative feelings, like Samantha explained; she doesn't listen to certain music that brings her "back to when things where bad in my life and they start making me feel that same way again, hopeless and worthless; it brings back the depression, the anxiety, the anger". Similarly, Debbie can't bear to listen to an album her ex-partner recorded for her, as it makes her feel "directionless", bringing back "existential angst". The associations of certain music can bring back feelings to the listener and lead to negative effects, as Douglas also highlighted, remembering how his mother would get physically

sick and nauseous when hearing Pachelbel's *Canon*, as that was played during her cancer radiation treatments. Association with one's life and memories can enhance the music's positive effects, however it can also lead to music being unhelpful and can carry significant risk for listeners.

The listener's existing emotions

Another factor linked to negative effects is the listener's existing emotions and mood. When feeling angry, music can have a negative effect on Samantha, for example. Independently of what the music is, it is unable to provide appropriate support at that time; it just "doesn't cut it" she said, "when I'm fighting with my kids' dad, (...) I get very angry and I don't wanna really deal with the music". Similarly, for Gwen music can be negative when they aren't engaged fully; not "as intentional or mindful" as they should be.

Impact and safeguarding strategies

The negative effects of music listening can be of different gravity for listeners. Lina described them as a minor inconvenience, but this may be due to her developing an effective safeguarding strategy, in her case changing the music to something she enjoys. Cala simply removes themself from the situation, and while for Rose the negative influence of music doesn't affect her daily life, "like watching a sad movie", she admitted she doesn't listen to songs that make her sad as she would be "in despair" if she did so. The participants, therefore, are aware that music listening can indeed have a negative impact. Gwen explained that they acknowledge this risk, saying "music always has the potential to evoke things that we're not expecting. (...) You never quite really know a piece, (...) there's always something new to be discovered". Music listening can trigger Gwen's PTSD, leading to reliving traumatic experiences and creating flashbacks, but they accept this.

Indeed, negative effects can be significant for some participants. Samantha described how music listening had a very negative influence when she was younger, saying "I listened to music when I was angry, and it would make me even more angry, (...) it did make me self-harm", so now she's "learned how to deal with that stuff. (...) When I'm feeling like that these days, I steer clear of things that make me want to do something bad, (...) I don't want to expose my children to that". She now knows to turn off the music and take a nap, work in her garden, or pet her cat. The negative effects of music listening are significant for Vaia as well, making her feel "like nothing has meaning, that life is hopeless, (...) I'm thinking about suicide too" she said, but when she sees that the music isn't working, she turns it off and goes to sleep.

According to the negative impact that music listening can have on them, participants have developed appropriate strategies. Debbie knows that certain music affects her

mental health negatively, so she stays away from it. Listening to Elvis makes Annie depressed, as discussed above, therefore when this happens, in a pub for example, she leaves the room, and at home she sticks to the happy music, as she described it.

The potential negative effects of music listening highlight the need for caution when considering music listening for wellbeing. They also emphasise, however, the value of its effectiveness, with listeners accepting this risk and choosing to continue using music listening to address their needs, developing safeguarding strategies to take back control or reduce the likelihood of hearing particular music. As Gwen highlighted:

> (This risk) is not anything that would stop me from listening to music. I treasure it on an artistic level (...), I recognise that art has the potential to do that and that's just one of the dangers of dallying with it. (Gwen)

Discussing the potential negative effects of music listening also supports how individual and contextual the outcomes are, depending on both intramusical and extramusical factors.

6.3.1.4 A precision tool for health and wellbeing

A precision tool for health and wellbeing discusses the sophisticated strategies developed by the participants when self-prescribing music listening for wellbeing, highlighting that not *all* music is helpful, but it depends on the listener and the context, among other factors. This theme comprises of two sub-themes, focusing on the purposeful use or *non*-use of music listening accordingly, and presents music listening as an adaptable and flexible tool. Self-prescription describes the use of specific music listening to fulfil particular listener needs, and No Music Moments discuss the purposeful non-use of music listening.

Self-prescription: Music listening prescriptions

The *self-prescription* sub-theme discusses the participants' detailed self-prescription practices. They believe that music listening can help them with a range of difficulties and in different situations, despite the above-mentioned variability and potential side-effects, and they seek the "right" music to achieve this. Factors that participants take into consideration when self-prescribing music listening are the specific purpose and context, their existing mood, and their health difficulties, with music listening approached as a precise tool that can help directly or indirectly.

Purpose-specific listening

Participants approached music listening as a precise tool explaining how different contexts and desired outcomes call for different music listening. When exercising, for example, Amanda chooses music with a different beat depending on whether she's fo-

cusing on cardio or strength. Douglas described how he uses different music in different situations and for different purposes, saying:

> When you're doing work, having music with a good beat and something that you're kinda familiar with and kinda gets your blood going is really effective. (...) Like *The Israelites* by Desmond and Decker, music that you could dance to and it's generally upbeat. (...) Then when you're trying to wind down it makes sense to put on a Johnny Hartman record and listen to old corny jazz music. (Douglas)

Thomas uses different playlists to address different needs, organising his music according to these; the playlist he listens to when feeling well is long and diverse, whereas the playlist he listens to when he's sad is short, as he expects quick results at those times.

The listener's existing mood

The participants discussed their existing mood as one of the most important factors for self-prescription of music listening, as Gwen vividly explained "it's a very reciprocal relationship between mood and music, and music and energy". When he is angry, Manos listens to pieces from his favourite genre, italodisco, such as *Say You Never* by Lian Ross and *Samurai* by Michael Gretu, because the melody and the sound of the synthesiser helps him relax, think clearly, and make the right decisions. When Mario is angry, he needs angry music, "something to fly with", to make him feel better. When Douglas is sad he listens to "a John Coltrane and Johnny Hartman record that came out in 1964 and it's just really slow and tragic", which "aestheticises" his sadness. Similarly, listening to Anhoni only helps Debbie when she's sad, as she finds their voice healing, uplifting, and soothing. Peter further explained how he uses different music depending on his mood: if in a good mood he listens to "80s music cause that reminds me of when I was young", whereas when he's feeling low he listens to mournful music like Motown and "things like Radiohead, who everybody says is really depressing music, but (...) that lifts my mood".

The listener's existing health and wellbeing – indirect and direct influence

Another significant factor are the listeners' existing health difficulties, adapting their music listening to satisfy a wide range of specific health-related and wellbeing needs. Each participant had different health needs, that they addressed differently. Focusing on health and wellbeing, some participants argued that music listening is a positive but indirect influence. For example, Manos said that it helps him feel better and happier. He clarified that he doesn't listen to music *for* his health per se or due to his diabetes, but it helps. He doesn't see it as a pill rather as a need, saying "feeling more happy influences your health, because when I feel anxious my diabetes is worse, (...) and music helps that way".

On the other hand, many participants discussed music listening *directly* influencing their health and wellbeing, leading them, therefore, to use music listening in particular ways, with Annie arguing that music is like "a happy pill you take". For example, when in physical pain, Miguel needs to "hang on" to a national anthem or heroic song for "strength, faith, and hope". When recovering from his operation, Peter listened to "depressing music" like Nick Cave, as it matched his mood and helped him after being diagnosed with a terminal illness. He described his mindframe at this time, saying:

> Especially when you're first diagnosed with cancer, you're worried about how far it's going to go, or if it has spread, and if it's going to be terminal obviously. (...) Around that time obviously you were worried about whether this was it, is this the end of my life now or what? (Peter)

Chris listens to particular music to help with his anxiety, which he calls his "saviour of the moment" and a "brief painkiller", as it helps him clear his head and reset his anxiety. When Samantha's depression returns, she listens to instrumental meditation music and nature sounds, to slow her mind down and feel at peace. When her anxiety is high, though, she chooses music that will help her see that others feel the same way, music that takes her somewhere else and will help even out her breathing so she's not hyperventilating.

Due to the perceived impact that music listening can have on their health and wellbeing, certain participants have developed highly sophisticated and precise personal music listening strategies linked to their health challenges. For example, Gwen described in detail how they use music as part of their self-care. They explained:

> (Music listening) is definitely a part of my self-care, (...) as a sort of complimentary therapy (...), helpful and influential and does some of the things that I find medication can't. It can provide additional pain release, (...) a mental distraction when one needs it. (...) Music can help me get out of bed in the mornings, music can help with my energy, it can help keep me moving when my joints are stiff (...), it provides distractions when you're having a (PTSD) flashback, it allows you to forget about the excruciating pain for the moment and think about how amazing this key change is. (Gwen)

Music listening helps both with their PTSD and mental health, and with their chronic pain and physical health challenges, and they choose music according to the difficulties they are facing that day:

> If it's a bad mental health day with my PTSD, my two main problems are really severe and acute anxiety and relived experiences, (...) then I need something really immersive, something that I can belt out and sing; a longer

> piece that allows me to live in the moment and live in that music, and that's generally when I will go for *Hamilton* or *Wicked!* (...) Musicals (...) give me another story to focus on, (...) instead of thinking about trauma I'm thinking about a showdown between Alexander Hamilton and Erin Bird. (Gwen)

Further discussing how they use music listening to help with PTSD, Gwen explained:

> When I'm in the most intense moments of relived experience I will put on music and I will immerse myself in music and music will become what I am in that moment, (...) in an attempt to get away from all of the things that I don't want. (...) It's a very physical way to remind yourself of where you are. (...) If I wake up in the middle of the night from a nightmare, I can put music on, and it reminds me that I am here and that I am safe. (Gwen)

On the other hand, if Gwen is facing physical difficulties, they will choose different music to help, saying "I will usually go for shorter pieces, (...) the 3-5-minute range, because (...) if I'm in a lot of pain it's very much getting through those next 30 seconds". Having developed these strategies, Gwen said music listening helps them even on the worse days, saying:

> Even on the days when I can't get going, (...) (and) all I can do is guzzle pain medication and sleep as much as possible, (...) I can still listen to music and that's the one thing that I can do that isn't just sitting and moping and being in pain, (...) giving me purpose, (...) the one positive thing I have. (Gwen)

The right music

Participants discussed how they consider their existing mood and health-related and wellbeing needs when self-prescribing music listening, choosing music accordingly, however this isn't necessarily straightforward. Gwen explained that the relationship between mood and music is reciprocal, meaning that while the listener may aim for the music to lift their mood, their low mood could affect how the music is heard, potentially leading to different or unexpected outcomes, as discussed in Section 6.3.1.2. Furthermore, while sometimes the listener knows exactly what music they need, this isn't always clear. Vaia, for example, knows what music she needs to listen to because it's already playing in her head, a seemingly automatic process that matches her mood to music, changing when the mood changes, as she explained:

> There are days that I wake up and, maybe because I'm angry, I hear in my head heavy metal music. So, I wake up and put heavy metal music on. (...) It's related to my pain because when I'm in pain I cannot sleep well, and my mood is awful, and it also makes me angry (...) and this does not

> go with calm music. (Vaia)

Peter and Samantha also use music listening to fulfil their needs, but the process of choosing music helps them identify what they want. Peter highlights that it can be a challenge to pin down what he needs. He argued that there is always music that will match any mood, but finding it is a trial and error process; he almost automatically goes to music that matches his mood, like "a reflex", but this may be unhelpful, pointing out that learning how to self-prescribe music is a process. Self-prescription is also reflexive for Samantha. She looks through her playlist and chooses what "pops out" and "speaks to" her. Looking through her playlist and choosing, she is making free choices in a safe environment, as she has put together the playlist strategically to eliminate risk, which in practice means that it does not contain any songs that are likely to have negative effects, however, without eliminating unexpected outcomes, of course.

Describing their self-prescription strategies, the participants presented their sophisticated decision processes in using specific music to address certain needs, whether purpose-specific or related to their existing mood or health and wellbeing. They were aware that their self-prescription may sometimes be more helpful than others, and there was an implicit understanding that their strategies may differ to those of others. Specific music listening is chosen with particular expectations and for certain purposes, and similarly *not* listening to music may also be self-prescribed for precise reasons, as discussed in the next section.

No Music Moments: Choosing silence

The *No Music Moments* sub-theme highlights that choosing not to listen to music is an important aspect of music listening for wellbeing strategies, as it addresses the listeners' needs. This section discusses the times when participants chose to not listen to music, the rationale behind this, and the process of "going back" to music listening. Participants discussed not listening to music for reasons regarding focus and stimulation, negative situations, such health difficulties and depression, and important life events, for instance the death of a loved one. The strategies behind No Music Moments can be subconscious or explicit, and not listening may last for a couple of hours up to months and years.

Focus and stimulation

Listening to music can be overstimulating and distracting for certain participants at times, so this is why they choose to not listen to music. For example, Lina doesn't feel like listening to music when she needs to solve important personal issues, like problems to do with her family that live abroad, as she needs to focus on her thoughts and understand potential solutions; she doesn't feel like listening to music at those times, "it's just not the priority". Listening to music seems to require head-space and

wouldn't allow these participants to focus on the task at hand. For similar reasons Douglas doesn't listen to music when he wants to shut down, as music keeps his mind active, so he chooses to watch TV instead. He said "music is like food and TV is like rice cakes, (...) no flavour, but when you just want to shut down that's good". Apart from being a distraction, music can be overstimulating at times. Chris explained that at emotionally intense moments he would "shut off everything, (...) sit there and cry", as listening to music would be "too much", and Miguel cannot listen to music, or indeed any sounds, when his anxiety is very high, everything is "too loud".

Existing negative mood

Choosing not to listen to music for some participants was linked to their existing negative mood, music making them feel worse at those times. Lina, for example, doesn't listen to music when she is very sad and thinking about a problem. She said "I probably feel too sad to listen to music, even though there would be some music that would maybe help me think out those problems, (...) but I don't want any distractions. I'm not even probably talking to anyone". Amanda doesn't listen to music when she's sad either, as it won't help her change anything and she wouldn't enjoy it. She wants to feel her sadness but not be distracted by music, and music could also amplify it, she said. Samantha also wants her moment to be angry without the presence of music, saying:

> There's always music on around me, unless it's one of those moods where I can't get into anything or I feel too upset, those are the only times there's really no music playing around me. (...) Times when music just doesn't cut it. (...) Times like that I do tend to get very angry and I don't wanna really deal with the music, I just I want my moment to be angry. (Samantha)

At times, not listening to music seems to come naturally, and the participants simply don't feel like it. A other times, however, it can be a more conscious decision, aiming to not exacerbate their existing mood. Alessandro, for example, recognises that when he is anxious or annoyed, listening to music would make him over-think things and feel worse, so instead he sits down to get his thoughts in a good path. Samantha as well makes a conscious decision to turn off the music when it's making her feel worse and do something else instead, as mentioned above. In these cases, it is choosing *not* to listen to music that supports their wellbeing.

Health difficulties

Health difficulties, mental or physical, make some participants not want to listen to music. Even if they often use music listening to help with their health and wellbeing, some participants said that when they are really ill music would be too much to handle.

When Luciana is in pain she wants silence, and any music is noise at those times. Similarly, when Beth had a near-fatal accident she couldn't bear listening to music at all; everything felt too loud. Gwen explained that when they are sick, they sometimes can't deal with the emotion music evokes or the attention it requires. They also gave another example of when they couldn't listen to music; they had just started taking medication that helped with their chronic back pain. They said:

> There was a very deep sensation of loss of self, (...) it was just a life-altering situation. (...) I couldn't listen to music for a month, because I was just so in awe at life with less pain. I actually didn't know who I was without pain, I didn't know how to live life in less pain. I was just profoundly lost in the idea that life could not hurt as much, and listening to music was so difficult; every time I played a song I would just start sobbing hysterically because it even sounded different, everything was just so much more vivid when the cloud of pain was lifted even a little bit. (...) I think mostly (it was) mental but also definitely physical. Music (...) has a way of moving through your body, you can feel the vibrations, and the experience of allowing the music to move through me and noticing the physical differences in my body in that moment was very difficult as well. (Gwen)

Gwen was only able to go back to music about a month and a half later, once listening to music wasn't overwhelming anymore.

Mental health difficulties, such as depression, also make some participants not listen to music, and starting to listen to music again was seen as associated with feeling better and moving on. Rose didn't listen to music for almost half a year when she was depressed, as at that time she didn't want to live nor get better. Miguel also said that when he was depressed for about five years, he didn't listen to music or any other sounds, and everything had to be "pitch dark", "he was almost catatonic". For Vaia, not listening to music made her realise how significant her depression was, saying "I just couldn't hear the music, it was (...) in the background", until she started taking medication and her suicidal thoughts receded. These accounts highlighted that even though participants see music listening as helpful for health and wellbeing, there are times when music can't help or they don't want to use it, while not listening to music can also indicate that participants are going through very significant difficulties.

Negative life events

Another factor associated with participants choosing not to listen to music were important negative life events, like the death of a loved one. Annie couldn't listen to music nor sing for two years after her mother passed away, saying "I would try to sing sometimes, and I would start crying cause I felt like if mum's not here to listen then

I won't bother singing at all (nor listening to music)!". Listening to music amplified her mother's absence. For Luciana, not listening to music was an aspect of isolating herself when her parents were terminally ill, she said "my brother is dead from cancer, my father had two cancers, my mother two cancers, (...) and in that time I isolated (myself), I didn't want to talk to anybody because I got tired", and she went back to music when she went back into her normal everyday routine. In these cases, the participants decided for a No Music Moment consciously and returned to listening as part of going back to "normal" everyday life. In this sense, listening to music can be a signifier of normal life, and the absence of it can reflect the significance of the event.

Duration and going back to music listening

Whether due to the listener's negative mood, health difficulties, or important negative life events, No Music Moments ended, and the participants were able to go back to listening to music again. Depending on the reason and rationale behind this decision, the participants described intentionally not listening to music for a duration ranging from a few hours to several years. Lina may not listen to music for a day or up to a week if the situation is serious, and she can return to music when she has understood the problem and come up with a solution, and Amanda can listen again when she has figured out her thoughts and expressed her feelings. The process of going back to music, however, differed between listeners, signifying their return to normal everyday life. For example, Rose started listening again once her depression lifted and she had a more positive outlook towards life. Annie started listening and singing again when her daughter became interested in music. She said "I just wanted to let things heal and breathe and grieve for mum, but I think if you like something so much you just can't shut it off for life". Manos went back to music six months after his parents' death, he "tried to laugh again, tried to communicate again with people, to hear jokes, to smile again. My life went to the normal situation and a part of the normal situation was to hear music".

No Music Moments, as described by the participants, are a strategic use, or rather non-use, of music listening to support health and wellbeing aims, which should be equally considered; it is important that listeners know how to fulfil their needs through particular music listening, but also that they recognise when a No Music Moment is needed. These periods of non-listening may be due to different reasons and of different duration depending on the participant. Furthermore, they are linked to variability in response and side-effects and risk, since listeners may choose to stop listening to music due to adverse unexpected effects. No Music Moments in many cases seem to be a step out from everyday life and an exception for most participants, however, this section highlighted their importance and the rationale behind them, which is significant in the context of today's nearly omnipresent music listening and the frequent misconception

that listening to music always helps.

6.3.1.5 Learning journeys: Learning how to use music listening for wellbeing

The *learning journeys* theme highlights that music listening for wellbeing is learned and developed alongside the participants' lives. The themes discussed so far addressed the participants' understanding and their developed strategies. While this process was touched on above, this theme explicitly focuses on how the participants' listening and understanding are developed, through a reflexive process influenced by maturity and the passing of time, and life events. Changes were mainly in terms of preference, approach, effect, use, needs, and access, with participants acknowledging that music listening for wellbeing is indeed a learning process.

Maturity and the passing of time

The passing of time and growing older brought about a range of change for the participants. Some discussed a change in the music they listen to and their preference. Change in preference could be linked to a change in the listener's perspective, as some participants explained. For example, Samantha doesn't listen to the sad or angry music that she used to as a teenager anymore; she's going back to "peace, love and happiness" as she said:

> I feel like now that I'm older I'm more in tune with myself, with my emotions, and it's easier for me now. (...) As a teenager I tried to commit suicide, but now that I've grown up a little, I've learned how to deal with things better. (...) I've gotten better at knowing myself and my emotions, I know better what can help me. It's helped me to choose the artist or genre more carefully, (...) and I already know how this artist made me feel in the past, (...) different artists pull me out of different types of moods. (Samantha)

Some participants also mentioned that the impact of music on them is different compared to when they were younger. For example, Susanna described how as an adult she doesn't have "this type of feeling (like) when you are young, (...) an explosion of emotion", because she has other experiences in life.

Change in preference and use of music was also linked to a change in the listener's needs, potentially using music listening for different purposes. Growing older, Mario is now looking for the meaning in music, saying "when I was a kid, listening to music was more like entertainment, (...) now I'm actually looking for the message", which could explain why he said that "music couldn't make me sad when I was young, but these days (...) it definitely makes me sad". The reasons for listening to music have

also evolved for Gwen, as they explained:

> It very much started as just listening to music for enjoyment, (...) because other people are listening to music, (...) and now I listen to music as a much more integral part of my day. It's more intentional and more focused now. (...) It allows me to learn about myself. (Gwen)

For both Mario and Gwen, listening to music has become more conscious and they now seek to fulfil further needs than simply entertainment. For Vaia, music listening has also become a more conscious process, an essential part of her day. She explained:

> When I was younger, the music was more of a background to my day. (...) I find now that the music is part of what I'm thinking and part of what I'm dreaming. (Vaia)

In time, participants also saw their willingness to listen to new music change as well, with younger participants becoming more open as they grow up, and older participants settling for what they know they like. Gwen has become more open, listening to a "much wider variety of music now than I did even four years ago", and Alessandro said "I used to listen to 24-hour heavy metal, but now I listen to a lot of genres. (...) I grew up and it just happened". In contrast, Peter, who is in his 50s, seems to listen to less new music as he grows older. He said "when I was younger, I had a real hunger to go out and find new music all the time, something that was different, that a lot of people wouldn't have heard before". Douglas expressed similar views, saying "the older you get, the less receptive you are to new music, you've become satisfied with what you have. (...) I'm 37 and every year I acquire less and less".

Life events

For some participants, certain life events changed their perspective and influenced their listening. Thomas' music listening changed a lot when he moved away from his home country, and gained control and access to his own music listening. He explained:

> When I was younger, (...) because I didn't own a radio, listening to music was based on what that person was listening to, so I didn't really have a choice. (...) There was no internet to stream stuff, (...) there were the only tapes available in the car, (...) and I had to learn to like it. But now (...) I'm an adult and listen to what I want. My love for music has greatly increased and I'll go out and purchase music. (...) As opposed to me just sitting here and listening to someone else's music choice, now I get to spend money to listen to music that I want to listen to. (Thomas)

A very different life event influenced Gwen. They discussed how music listening has helped them since their chronic illness diagnoses:

> (I have) a different sense and appreciation of life. (...) All illness really makes you focus on both mortality and the quality of the life that you live, so I've noticed for me it makes me realise that my body is fragile, (...) there is a limit in the amount of time that I have and in that time I want to live a life that has meaning to me. (...) It makes me focus on the daily things that give me meaning, that give me purpose, that bring me joy. (Gwen)

Beth's approach changed similarly after her near-fatal accident, and now she sees music as a tool that promotes life. She said, remembering her car accident, "before, I just took it for granted, I took a lot of things for granted that I don't no more". Similarly, Luciana now listens to instrumental and positive music compared to when she was young and listened to sad music; due to her and her family's health difficulties and problems she said she now wants "positive vibes".

A learning process

Some participants emphasised that their use of music listening has developed mainly through a testing process and based on their experiences. Gwen pointedly described this as a process of trial and error. They remembered noticing the effects of music listening for the first time when they were young, "back in the 90s", when different songs made them feel differently. From there, however:

> Pretty much everything dealing with my health has been trial and error. I think with chronic illnesses there's not much of a focus medically with helping you adjust and helping you to figure out how to live your life with this giant obstacle now. It's a matter of giving different things a shot and seeing what works best and then repeating it again and seeing if it does the same thing. (Gwen)

Similarly, Vaia tried to find patterns and experimented, helping her to find the music that helps her now, as she explained:

> I tried to change (the music) myself to see what works on me and what does not, it's a very active effort because of my everyday pain and because of the depression too. (...) I keep notes and I do little experiments myself, I try repeatedly the same thing to see if it works and how many times it works. (...) I started keeping notes in a notebook. (...) I discovered music that made me feel better. (Vaia)

This theme highlights the development of music listening, and particularly music listening for wellbeing, alongside the participants' lives. While it may seem evident that music listening preferences and practices can change, their role in self-prescription and the risk associated with non-preferred music emphasises the importance of this change in the context of health and wellbeing. Furthermore, the participants' music listening

for wellbeing, for example their self-prescription practices, are a result of years of trial and error and practice, and must be seen in the context of the listener's lives and needs. Participants mature, time passes, and things happen in their lives, affecting their music listening, their preferences, their perspectives, and how and why they use music. These learning journeys are highly individual and contextual, developing reflexively in parallel with the listeners' unique life stories.

6.3.1.6 Fingerprints: My music is different to yours

The *fingerprints* theme highlights that music listening for wellbeing is unique between participants. They perceived their music listening different to that of others; they saw preference linked to their identity, understood their use of music listening and its effects as unique, and described this difference as expected and natural.

Preference as identity

Some participants highlighted how music is tied and reflects their identity. Lina said that music can tell you a lot about a person, as a window to one's self. In fact, listeners may seek to establish their personal preferences as opposed to those of others. Vaia explained how she "has a thing "for piano and her boyfriend for the cello, and she believes that everyone connects with a different type of music. Similarly, Miguel explained that he stopped listening to Debussy when others said it helped them, saying:

> I changed from Debussy to Satie, because Debussy after some time started feeling a bit too mellow, (...) a bit copied; it was like comparing Joy Division with Rihanna, and (...) if a lot of people like it, it's really just not personal anymore, you know! (Miguel)

Use and effect

Participants also explained how they use music listening differently to others. Chris suggested that everyone's experiences frame the way they do things, including how they listen to music. For example, Mario said his listening is different to others' because he sits and listens alone, focusing on the music "more mindfully". Peter believes his listening is unique because he prioritises music listening and purposefully picks music to accompany his day, as he explained:

> I find my listening habits are a lot different than most people, the fact that I would rather listen to music all day than maybe sit down in the evening and put on the television. Instead of going to the cinema I'd rather sit in the house with music on. (...) I'd purposefully pick certain music that I'd want to listen to at that particular time. (Peter)

Participants don't only perceive their way of listening as unique, but their approach

to it and its influence as well. For example, Gwen said they listen in a more holistic sense, listening for the effect it has on them, unlike other listeners. Miguel explained that it is the scale that music listening helps him that differs to others, saying "I feel a lot more". Samantha, similarly, said that music listening for her is an outlet and absolute need whereas others "can take it or leave it", and Chris thinks that it's how people use music at difficult times that differs the most. He believes that his relying on his safe songs (his MY Music, discussed below) may be different to what others do. "I have a particular thing that I want to escape from with music and I don't want to have to think about what music to pick, that's why I have my safe songs more than other people, my safe list" he said.

Difference as natural

Participants explained that it is natural that music listening affects them differently. Vaia suggested this is because everyone learns to interact differently with the world around them, and for Luciana and Thomas the difference in effect between people depends on factors such as the listener's life, mood, education, the place they live, and their personality. Beth explained that music makes her feel totally different to others, saying "I'm a different person, (...) I've got my own fingerprints, my own footprints, my own eye colour, my own genes, so it's (the music) gonna make me feel totally different". Samantha explained that everybody relates to music in different ways; some people feel the lyrics and understand what they say, others focus on the instruments. Debbie argued that how music makes listeners feel has to do with their own experiences and bodies, and explained she believes that how music affects her has to do with her anxiety, so music that might bore others brings her to a comfortable level. Thomas said that due to the way people are brought up and the things they've been through, music triggers different things.

With some participants suggesting that their music listening is as unique as their fingerprints, this theme highlights the perceived individuality of music listening for wellbeing. The listeners were aware of the differences between their listening and others', in terms of preference and use and effect, sometimes using this to define their own unique approach to listening. This becomes particularly important as it proposes that music listening for wellbeing should be, or inevitably does, differ between listeners, raising a question regarding blanket recommendations of "helpful" music listening.

6.3.1.7 Beyond music: "Listening to music is living"

The *beyond music* theme highlights that music listening for wellbeing transcends beyond music, into different aspects of peoples' lives, influenced and influencing their personal relationships, cultural identity and values, and personal life stories. The participants also described how they see music listening as an integral human resource and essential

part of their lives and life in general.

Music preference and personal relationships

The participants discussed the role of music listening in their personal relationships, as a point of connection and shared interest. Amanda described her first music listening experience highlighting its social aspect. She said that *Barbie Girl* by Aqua, "is one of those songs that a lot of people know the lyrics, (...) you can just sing along with everybody, it makes me feel like part of a community", and she suggested that music listening can help her connect with people who have similar preferences, providing a point of connection. This was also Lina's experience, with music preference playing a particularly important role in her life, as she explained:

> Common interest in music is how I met my husband (...). *LastFM*, this website, provides musical neighbours that have similar tastes in music. (...) We had a very high musical compatibility and we just started talking, and then one thing led to another and here I am! (...) We had a very high compatibility on the number one artist we listened to, (...) so that was something that attracted my eye, (...) common love for common artists. This made me think that that's a person that I would like to spend my time with or share my interests with, because we would probably have similar interests in other fields too or attitudes. (Lina)

Lina suggested that common preferences are linked to common values and interests, supporting her personal relationships. This is similar for Samantha as well, with common music listening functioning as a point of connection for her with her children and her partner. She explained that she listens to Gerry Garcia's *Sugary*, one of her very first music memories, every day. "My kids love that song also, so I'm hoping it carries the same effect for them one day. (...) I'm so happy that my kids (...) love music the same way" she said. Listening to music by Nicki Heaton, helps her feel closer to her boyfriend, and she also explained how she uses music listening to remember people close to her, for example:

> Yesterday, with the passing of my aunt, I listened to music a lot; Patsy Klein and things that she enjoyed. It made me feel like she was still with me, like she was talking to me through the music and made me feel better. (Samantha)

Thomas described how sharing in his mother's listening preferences has brought them closer. He had heard his mother's favourite song on the radio, and had been trying to find it for years. This year he finally found and sent it to her; he said "I guess I just wanted to help her to feel happy whenever she wants to, cause that's her favourite song and she'll listen to it", and now he often sends her songs that she likes.

Cultural identity and values

For certain participants, their music listening is aligned with their cultural identity and values, taking further the importance of music listening preference for one's identity. Samantha sees the importance of music listening in her life as linked to her Mexican heritage and the role of mariachi bands in Mexican culture, and Miguel sees his enjoyment and appreciation for sad music as associated with Portuguese culture, saying:

> I love Eric Satie; there's something about that sadness. (...) I'm Portuguese, we have a very traditional sad music, *fado*. (...) We, the Portuguese, have a strong reaction with nostalgia, (...) we love to feel sad! My wife is Brazilian, and she loves to be happy! We are the opposite; we are the Slavs of the Europeans! (Miguel)

While Samantha and Miguel see the association between music and their culture as positive, Cala highlighted how their view of her home country has led them to not listen to any Polish music, saying:

> Poland is a bit embarrassing, they have lots of very not cool views on other people, (...) and it's associated with the Polish people which I've got a grudge against, and it's also the Polish language, it's seen by many people as not a nice language. (Cala)

Some participants also saw music as linked to their personal values. For example, Mario listens to 60s and 70s music because he believes it's honest and not commercial, saying "when people made that music, they did it with their heart". For Miguel music reflects his political values, saying "for me and for a lot of people, their political leanings reflect on the sound that they listen to", and Alessandro sees his music as a religion, tied to his ethical values. He said:

> Tool are like a religion to me. Their songs and lyrics have a deeper meaning, messages about spirituality and how you can benefit society as a whole, (...) a certain set of ideas that they send to the listener. (Alessandro)

Music listening as life stories

For many participants music listening was linked to their life stories, serving as a memory index and soundtrack to their lives, a "gateway" into memories, as Chris argued, helping to access memories and feelings. While the association between music listening and memories can have negative effects as discussed in Section 6.3.1.2 and Section 6.3.1.3, participants also highlighted how they value this aspect in their everyday lives. For example, Thomas said "it's (music listening) giving me a lot of history, a lot of memories. If the music is not there to trigger the memories, then those memories would be lost (...). Music is like a search engine for the brain". Similarly, Peter

explained that music listening is important because it is linked to his life story, helping him remember points of his life:

> To me, music is a very very important thing. All the way through your life, music, different songs (...) pinpoint moments of your life. You remember exactly what you were doing at that particular time when you first heard that song. It was one of the first gigs that I went to see when I was 15, Siouxsie and the Banshees, and I can remember that as plain as if it was yesterday. It reminds me that when that gig was on in Belfast there was a massive riot going on because of The Troubles, which we walked through the middle of on the way to the gig! (Peter)

Similarly, Miguel remembers the first music he listened to as part of his family history and in the context of the Portuguese revolution. He described his first time listening to music:

> I was about three years old. It was before the Portuguese revolution in 1974 and my mother was singing to me a song that was forbidden, so she was singing very very quietly. I loved that song! It was from a Brazilian singer, and she sang it really slowly and quietly for me, because my neighbour was from the political police! (...) It was really late, a lot of tobacco, (...) and dark, really dark. (Miguel)

Music listening as a human resource

For many participants music listening is an aspect of life and being human, situating them in the world. Some saw music listening as a form of art, making life richer. For example, it is a creative outlet for Gwen, Rose said it adds "colour to life" and Alessandro called music listening "the most creative thing that humans are doing, (...) the art of time". Annie feels that "music lifts the world" and Beth said that music "makes the world go round".

Indeed, participants discussed music listening as a general life resource and an essential aspect of being human, and emphasised its importance in their life. Gwen discussed the role of music listening as an integral part of all human life saying:

> It (listening to music) can teach you so much. The entire breadth of human experience is given to you in music. We have this amazing power to really express what we feel and what we've experienced and who we are through music, and then as a listener we can hear that, and we can learn that, and we can gauge experience and we can expand our life through music. (...) (Music listening) connects us to this innate collective unconscious that we all have, primal, that is driven by a beat. We are constantly surrounded by music even if we don't notice it, there's music in the sounds of nature, there's

> music in the bubbling of a boiling pot, there's music in our heartbeats, there's music in everything that we do, and I think that it sort of connects to that and makes us aware of the art and beauty in everyday life and allows us to tap into that as a form of strength. (Gwen)

Most participants expressed similar views about the essential role and importance of music listening in their lives. Beth said music listening "makes me feel I'm human", without music Alessandro could not "hang on much here", and Peter highlighted its importance saying "listening to music is an essential part of life. (...) Music is everything, and to me, if you don't have music in your life you have no life". Similarly, Samantha said, "listening to music is my life; it's a part of me and anybody that knows me would tell you they don't see me without music", and Miguel said, "I have to listen to music, I can't help it, it's like breathing, you know? for me listening to music is living". Susanna can't imagine life without music, as she explained "it's part of our life, it's part of human nature; our heart is music, (...) we are born in the music that is our cry, and the voice of our mothers".

The themes found in the interviews and discussed in this section highlight how music listening is used for wellbeing in everyday life, its effects, whether positive or negative, and how it is learned and developed uniquely by each listener. They highlight the intricacies of music listening for wellbeing; this theme takes this further, discussing the wider role of music listening within the listeners' lives and the expanse of its influence. This theme emphasises that music listening is an inextricable part of everyday life, in dialogue with personal relationships, values, life stories and a part of human existence, and thus cannot be seen nor studied outside this context.

6.3.1.8 MY Music

The *MY Music* theme discusses certain music, named in this thesis as MY Music, used by the participants as a reliable and safe wellbeing resource. Participants recognised that music may affect them differently at times, as discussed in Section 6.3.1.2, and can indeed be negative and unhelpful, as shown in Section 6.3.1.3. Despite this, the participants offered accounts on how they use their MY Music: a defined and finite body of music that is a constant and essential resource. It is not simply their preferred or favourite music, but a much more focused body of music with a very important role; highly personal, precise, yet flexible, an adaptable tool that – nearly – always helps.

What is MY Music

MY Music is music that listeners enjoy, but it's much more than that; it is an essential resource for their health and wellbeing, providing support through difficulties that cannot be provided by other means. It is a highly personal and specific body of music,

for example a number of songs, the work of a few artists, or a particular specialised sub-genre, which the participants called their "go-to", "back-up", "stand-by" music, their "safe spot", "safe playlist" or "reliable option". MY Music is reliable and safe, as it has been tested over time and is tied to the listeners' lives and memories, but it is also adaptable in terms of the needs it can fulfil. Furthermore, it can change gradually and evolve alongside their needs, for example when it ceases to be personal or helpful. It can be used for a wide range of reasons and in different situations, with some participants using it every day, and others savouring it in moments of need. As a health and wellbeing resource, it works fast and with certainty, *nearly* always, and when all else fails. Participants keep their MY Music accessible and use it in a wide range of situations, including as support with health difficulties in particular. Participants discussed using it, for example, to bring happiness, calm anxiety, distract from fear and pain, escape, and to help with loneliness and depression. MY Music, furthermore, provides a safe way to go back to music listening after a No Music Moment.

MY Music greatly differs between listeners, however the interview participants described it in very similar words. They argued that their MY Music – nearly – always helps them and highlighted the factors that are important independently of what the music *actually* is: adaptability, links to life and memories, and accessibility. Peter, for example, described his MY Music as specific but adaptable, saying:

> There's about four or five songs that I'll always go back to. They're songs by bands like Propaganda, *A Brilliant Mind* by Furniture, (...); no matter what sort of mood I'm in, it works. (...) You go from one extreme, your love ballad type thing to your more rockier stuff. (...) To me they'll always be top of the playlist, (...) they'd be always my go-to, no matter what my mood is, I know I would feel better after listening to them. (Peter)

Thomas' MY Music, the genre he described as "oldies but goodies", also helps him no matter what mood he's in. He sometimes needs to listen to a song repeatedly, and he makes sure he can access it at any time on his phone, as he explained:

> *Don't Worry Be Happy*, is a feel-good song and a sad song at the same time for me; (...) it lifts me up when I'm sad and then when I'm happy it makes me feel good. (...) Sometimes (...) I just lay down and keep on listening to the song over and over and over again, till the song actually reminds me that I'm on a mission (...). It always works, Bobby McFerrin always comes through! (Thomas)

Lina's MY Music are songs by a few bands that she turns to when all else fails. She can listen to them "almost always" and will enjoy them no matter what. She highlighted that this music has been with her for some time, as she explained:

> The safe playlist (...) are just classics that I've been enjoying for a long time, (...) that I'm sure about, (...) I have good thoughts or memories about them. (...) It's been there for a long time, (...) it's like a sound of familiarity. (...) Certain songs that I will always go back to, that I know will improve my mood even more. (Lina)

Lina reflected on the relationship she has with her MY Music, saying that in this music she has found "her true self that will follow her everywhere". Her MY Music "reflects what I am", reminding of the link between music listening and identity, as discussed in Section 6.3.1.6.

Like Lina, other participants emphasised that their MY Music has been with them through the passing of time. It seems to be tested over time, its importance and effect strengthened by familiarity and the music's association to life histories, memories and identities. Gwen, for example, explained that they have a strong emotional attachment with their MY Music, saying that it "connects me to really profound moments in my life". For Alessandro, his MY Music has a particular effect on him due to his connection with it, as he explained "*Angelika* is just a really, really, really good song and (...) I've been listening to it for a long time and has a big part of me in it. It's the only song that gives me goosebumps every time I listen to it". In fact, Peter explained that his MY Music helps him particularly due to the attached memories, it reminds him of "a happier time. You're talking about mid to late 80s, living in London, going to gigs, (...) that's probably the main reason why more than anything those songs always help me". As a result, "those songs make me feel safe. (...) You're worried about your health and things, they make me feel safe (...) and remind me of what my life used to be like", he recounted.

For some participants, their MY Music is associated with their very first music listening memory. For example, Chris remembered:

> I first listened to music when I was being driven to school by my dad, I was about four or five years old (...) and he would put Queen CDs on. (...) It's always refreshing to go back to something that I've known for a long time, like a safe, old reliable option. (Chris)

Similarly, Thomas described his MY Music as something he used to listen to as a child:

> When I was in high school back in Nigeria, I went to a missionary school so from the school to my home was about four hours. (...) My dad was the person who would come pick me up from school and would drop me off. All the way for four hours we were blasting reggae and oldies but goodies, (...) from when I was 11 years old to 16 years old. (...) It was kinda like feel good music to me, (...) I feel like it speaks to me. (Thomas)

Samantha expressed similar feelings about her MY Music, saying that the songs "take me back to that time when I was little girl dancing in the field in my little sunny dress, bare feet, and I still get that same giddy feeling about those songs today". It seems, therefore, that the link between MY Music and life stories and memories is fundamental. MY Music has proved to be a resource over time for the participants, it has history with them, as Lina highlighted, "that playlist is not new, it has been there for some time".

Accessibility and portability was another important factor when discussing MY Music. Thomas makes sure to have his MY Music accessible on his phone at all times and Gwen has theirs in their "back pocket", on every device they own so they can take it with them wherever and whenever they need it. Making it even more accessible, they have also memorised these songs so they can sing them if need be, similar to Miguel accessing his MY Music through internal listening if needed, as discussed in Section 6.3.1.1, "when I can't listen to it, I play it in my mind", he said. In fact, he explained that the last time he had surgery, he was lonely and depressed in the hospital and "had four or five songs that couldn't leave my mind. (...) I always listened to those four songs, The *Gnossiennes* by Satie! (...) I think my brain formulated the songs because of the state that I was in".

When is MY Music used?

MY Music was described by the participants as a highly flexible and adaptable tool, one of its main features being that it can be used at any time, as Lina highlighted:

> The situations that I would listen to that (her MY Music) could vary greatly, (...) I really can't think about times that playlist would not help me; probably any time I wanted to or needed to, I could play it. (Lina)

Accordingly, the participants identified specific situations or moments that they seek its support, ranging from times when they simply want guaranteed enjoyment, to times of weakness, great need, or when coming out of a No Music Moment. Lina explained that she turns to her MY Music at different times; when she's not feeling confident, and when other music isn't working, for example "if there are any moments where I'm feeling that maybe this is not the right music then (...) I probably go to my safe spot and just click again on the same music that I know that I enjoy". Furthermore, she

also uses her MY Music when she's not in a good mood and needs support, when she is "feeling low, (...) that's when the safe playlist comes in", as well as coming out of a No Music Moment, when she hasn't been listening to music and feels that "kind of emptiness", helping her transition into listening to music again. Like Lina, Chris also uses his MY Music at different times for a range of reasons. It is a reliable option when he simply wants quick results, for example "when I decide that I'm going to listen to music and I want to be very sure that I will quickly get what I want out of it", but he also uses it when he needs specific support, as he explained "if I'm not in the greatest mood and I feel like I need a bit of a lift, I'm more likely to go for the safe old reliable category".

For many participants, their MY Music plays a particular role in regard to their health difficulties, with some using it on a regular basis and others saving it for the most difficult times. Peter uses his MY Music regularly, including it in his everyday playlists, and it has particularly helped him when facing health challenges. Thinking about his chronic illness, he explained the role of his MY Music:

> You don't feel like you're a full person anymore, you feel like you've lost a part of you. (...) You do have good days, bad days, because I get tired very easily. (...) At those moments, I try to relax and (...) listen to a lot of music. (...) If I'm feeling ill, if I get a flare up with the sarcoid, I would just normally go lie down for a while but would have my earphones in and I'd probably be listening to those same songs. (...) I'll always go back to those same three or four songs all the time, no matter whether I'm physically not well or mentally not well. (...) The go-to songs make you feel safe, they remind you of better times, but also, they remind you that things can get better. (...) Yeah, it's a bit of a tough time at the moment, but as long as I've got my music, I'll get there in the end. (Peter)

Similarly, Miguel uses his MY Music when recovering from severe anxiety, he said:

> I always go to Eric Satie, the *Gymnopedies* and the *Gnossiennes*. (...) After about an hour I can listen to people again, it's working! I get calmer, I can cuddle my dog again, I can talk with my wife. (...) The moment I sit in a relaxed position and I put on the music, seconds later my heartbeats start to slow down to the rhythm of the music, but I must focus completely on the sound, I must focus on that small banging on the piano. (Miguel)

While Peter and Miguel seem to use their MY Music at various times, Gwen uses it particularly "when the illness is more acute", saving it for those moments potentially due to them believing that the effectiveness of music reduces with use. They explained that their MY Music:

> Are certain songs that I turn to in those moments and it's this instant sense of home and calm and safety. They're songs that I don't use often because I want to cherish them and save them for those moments of severe and dire need. (Gwen)

Even though they use this music only at particular times, it has still helped them in different ways; "it has calmed anxiety, it's distracted me from fear and pain, it's gotten me through some really bad moments in the past couple of years and (...) been a constant background support", they explained.

In discussing their MY Music, participants emphasised that it's an essential resource for them which cannot be replaced, describing different ways it has helped them. Miguel tried many other alternatives with no result, as he explained I "tried everything, from electro-acupuncture, to homeopathy and pills, every kind of nonsense that my parents led me to, and music was really always my perfect escape. (...) Yes, it was always my pill". Gwen similarly said that their MY Music helps with things that medicine cannot, such as getting out of bed in the mornings and providing a distraction when they are in pain.

Change in MY Music

MY Music is a resource that stays with them and proves its effectiveness through time, being called "old" and "familiar" by the participants. However, the effects of music can change, and it can become unhelpful, as discussed in Section 6.3.1.2. Accordingly, the participants' MY Music is not static but develops alongside their needs and lives as part of their learning journeys, with the music still proving its effectiveness through time. Lina, for example, explained this change saying "I do add some new music to my safe songs. As I discover new artists that I like they have a *possibility* to go into the safe playlist [emphasis added]". Miguel also highlighted how his MY Music has changed in the past, changing to Satie from Debussy, as the music "started feeling a bit too mellow". For now, however, he is not planning to change, "maybe the music that helps me will change, but for now it's a proven cure so I will stick with that", he said. Peter has also stuck to his MY Music, saying "I don't think I've actually found anything that can replace those, I keep going back to them, there's a few make it close but not quite close enough".

Why MY Music

Through the participants' accounts it is evident that their MY Music is a significant part of their lives, an essential resource that they can rely on. Vaia said "I feel like this music belongs to my world, belongs to my day". For Chris, his MY Music is "like having an antidepressant in my bag. Instead of taking medicine, I just stick in headphones and apply the antidepressant via sound, like medication". MY Music is a

constant resource for the participants. Peter further explained:

> These songs will always be there, for as long as I am around those songs will always be there for whatever mood I'm in, (. . .) those songs are still a big part of my life and they will always be. (Peter)

While listeners have access to a multitude of musics, now more than ever, their MY Music seems to hold a unique place in their lives. This theme highlights the great importance that certain music can play in the listener's life. Furthermore, taking into consideration the differences in the music which the participants discussed as helpful for them, and how this resource is developed, once more highlights that not just any music will do, but *any* music may be helpful to a certain listener.

6.3.1.9 Summary

The eight subordinate themes discussed here offer insight into different aspects of music listening for wellbeing. Music listening is dynamic, its effect differing at times even for the same listener and carrying potential negative side-effects. Despite this, participants choose to self-prescribe precise music listening to fulfil a wide range of needs, including support with health-related difficulties and wellbeing needs. When needed, they make the executive decision to *not* listen to music, and return to it when ready. Participants learn how to use music listening for wellbeing throughout their lives, developing unique practices, which are inextricably linked to their identities and lives. Finally, participants described a specific body of music, described in this thesis as MY Music, which they use as a constant, safe, and reliable wellbeing resource, particularly at difficult times. Through the participants' accounts, these eight themes argue that:

- Music listening is not passive, nor only listening.
- The same music can influence even the same listener differently.
- Music listening can have negative side-effects.
- Music listening for wellbeing is a very precise and adaptable tool, and includes the purposeful choice *not* to listen to music.
- Music listening for wellbeing is learned and developed, linked to the participants' life stories and lives beyond music.
- Music listening for wellbeing is unique between individuals.
- MY Music is an essential wellbeing resource with an important role in music listening for wellbeing.

6.3.2 Music listening for wellbeing: Four superordinate themes

Through further analysis of the eight subordinate themes, four superordinate themes emerged. These themes describe and define four important aspects of music listening for wellbeing:

1. Individuality
2. Contextuality
3. Adaptability
4. Sophistication

6.3.2.1 Individuality

The *individuality* theme focuses on how music listening for wellbeing is used differently between listeners with different outcomes. All the eight subordinate themes highlighted the individuality of approaches, practices, and effects. The dynamic aspects of music listening differed between participants, as did the variability in response, and the music or situation that might lead to negative side-effects differed as well. Listeners used music as a precision tool, self-prescribing according to their personal strategies, and chose No Music Moments in different situations, learning and developing their individual music listening for wellbeing through, and in dialogue with, their personal experiences and life stories. Finally, MY Music is a unique body of music chosen by the listeners themselves, and participants used it in distinct ways depending on their individual needs. The individual diversity in all subordinate themes found in this research highlights an important theme, therefore, that music listening for wellbeing is, in all aspects, personal and tailored to the individual.

6.3.2.2 Contextuality

The *contextuality* theme focuses on how music listening for wellbeing is used differently between situations and times, with different outcomes. Six of the subordinate themes addressed the contextuality of approaches, practices and outcomes. The listener's context is an important factor that can lead to variability in response and negative side-effects. The participant's self-prescription practices take context very much into consideration, as it is one of the most important factors, and certain situations may call for a No Music Moment. The participants' music listening learning takes place in and through the context of their everyday life, differing to that of others for this reason as well. Finally, the participants' MY Music is also developed alongside their life to address their needs, influenced by their environment. The context-specific aspect of music listening for wellbeing found in this research supports the importance of external

factors, with many aspects of music listening for wellbeing being highly context-specific.

6.3.2.3 Adaptability

The *adaptability* theme highlights the flexibility of music listening for wellbeing, in terms of when and how it is used, as well as what music is used. While music listening for wellbeing is a precise and focused tool, it is used by the participants flexibly due to its adaptability, through different strategies and using different music to help with a wide range of needs and in different situations. These findings suggest that music listening changes and can be helpful at almost all times, emphasising its adaptability. Furthermore, these findings suggest that *any* music could be potentially used by certain listeners for wellbeing purposes, adapted to the individual's needs. All eight of the subordinate themes addressed the adaptability of music listening for wellbeing. Music listening has different dynamic aspects between listeners and times, allowing for a flexible experience. Variability in response highlights the reflexivity and change in music listening and its outcomes, and participants explained how they adapt their music listening reacting to negative side-effects and to avoid risk. Self-prescription directly discussed the flexible ways that participants used music listening, including No Music Moments, adapting their strategies to their current needs. Learning journeys, furthermore, describes the evolution and adaptation of the participants' listening throughout their lifespan; their learning leading to change. Fingerprints emphasised the adaptability of music listening for wellbeing in regard to individual listeners and how it is adapted to each participants' needs and life, and beyond music noted that links between music listening and aspects beyond music develop and adapt according to each listener's needs and lifestyle. Finally, MY Music discussed a specific body of music that participants use to address a wide range of needs, a flexible and adaptable tool in its own right.

6.3.2.4 Sophistication

The *sophistication* theme addresses the listeners' elaborate music listening for wellbeing practices, as well as their awareness and high-level understanding of the subordinate and superordinate themes, as presented throughout this chapter. The participants, coming from very different backgrounds, ages, and lifestyles, showed awareness of the role of music listening in their everyday life and were able to communicate their sophisticated music listening for wellbeing strategies, discussing precise outcomes and influencing factors, resulting in the current rich findings. All eight subordinate themes highlight the sophistication of music listening for wellbeing and the listeners' high-level understanding: listeners were aware of how their listening is tied to other dynamic aspects, and described very precisely how music listening may affect them differently

at times, positively as well as negatively, and discussing relevant influencing factors. They described their sophisticated self-prescription strategies, making complex executive decisions and using specific music with precision, including choosing No Music Moments when needed. Furthermore, the participants explained how they have learned to use music listening for wellbeing, influencing and influenced by their lives, becoming as unique as their fingerprints and linked to aspects in their life beyond music. Finally, the participants discussed their MY Music, explaining how they use this specific body of music, why, when, and how it helps them.

6.4 Summary

This chapter discussed the interview design, data collection, and analysis process, and presented the main findings. The interviews conducted for this research further confirmed the effectiveness of crowdsourcing methods for qualitative research, exploring the relationship between music listening and health and wellbeing in everyday life, and how it is understood and used by the participants. The participants came from diverse backgrounds and lifestyles, offering rich insight into their lived experiences of music listening. Furthermore, this qualitative data took further findings from Surveys 1 and 2 through triangulation, and enriched the previous findings through providing a richer real-world context in which to understand them.

Through the participants' accounts and following Framework analysis, eight subordinate and four superordinate themes were identified. The subordinate themes highlight that music listening for wellbeing is dynamic, including further processes and actions beyond just listening, that music can affect even the same listener differently, and that it can have negative side-effects. Participants presented their precise and adaptable self-prescription strategies, including when they choose *not* to listen to music during No Music Moments. Music listening for wellbeing, furthermore, was discussed as a learning process, developed alongside participants' lives, as unique as their fingerprints, and linked to aspects beyond music. Finally, an important wellbeing recourse was presented, MY Music, an essential and reliable tool which participants use to enhance their wellbeing at difficult times.

The four superordinate themes highlight important aspects of music listening for wellbeing: i) individuality, ii) contextuality, iii) adaptability, and iv) sophistication. Music listening for wellbeing is personal and contextual, being used precisely but adaptably, and through sophisticated strategies understood and developed by the listeners. The wellbeing use and effects of music listening in everyday life, therefore, should be approached accordingly.

These findings greatly support the benefits of music listening for wellbeing, despite the potential risk. They, however, call for caution against approaching music listening out of the context of the listener's life and without taking serious consideration of their expert understanding, seeking to move away from blanket recommendations and a one-size-fits-all model of music listening for wellbeing. The interview findings are discussed further in Chapter 7, and alongside the survey findings in Chapter 8.

Chapter 7

Discussing the interview findings

7.1 Introduction

This chapter discusses the interview findings in the context of relevant literature, painting a picture of what music listening for wellbeing may look like for the international general population. The four superordinate themes are initially discussed, outlining their relationship with the subordinate themes, and then relevant key points from the subordinate themes are presented.

7.2 What music listening for wellbeing looks like according to the four superordinate themes

7.2.1 Music listening for wellbeing is individual

Music listening for wellbeing is different between individuals, concerning the music chosen and the listening reasons and effects, and this is reflected in seven out of the eight subordinate themes[1].

The dynamic aspect of music listening is expressed differently between listeners, potentially based on their needs and preferences. For example, some participants, such as Annie, Thomas, Mario, and Samantha move along to the music and see this as an indication of its benefits. Chris, on the other hand, knows that the music is working when he gets goosebumps. While all music listening seems to involve dynamic aspects, how they are expressed within one's body and mind is highly personal, with the experience

[1]The individuality of music listening for wellbeing is reflected in the following subordinate themes: dynamic music listening, side-effects and risk, self-prescription and No Music Moments, learning journeys, fingerprints, beyond music, and MY Music.

and its outcomes varying greatly.

There are also individual differences in the potential negative side-effects and risk of music listening, focusing on the nature of the side-effects, their gravity, and what music carries risk for each listener. Given the link between risk, preference and control, associations, and existing emotions, it is evident that side-effects vary between listeners; for example, Annie can't listen to Elvis following her mother's passing, however, Samantha enjoys the music she used to listen to with her, now estranged, parents, as this nostalgic experience brings back the positive feelings she felt at the time. This is in line with research that suggests that certain music can have positive or negative effects on specific listeners depending on traits, such as depressive or ruminative tendencies (Garrido and Schubert, 2013). The scale of side-effects between listeners can also differ. For Rose, for example, the negative influence of music is equivalent to watching a sad movie that doesn't affect her life, but on the other hand certain music can make Vaia feel suicidal and hopeless. Accordingly, the participants have developed different personal safeguarding strategies: Vaia turns off the music and goes to sleep, Samantha does work in her garden, and Annie leaves the room. The specific reasons behind the negative side-effects and their impact are highly individual, therefore, with listeners developing personal safeguarding strategies and adapting their listening accordingly.

Self-prescription practices are also very personal, leading Sloboda to argue that music cannot be prescribed in a generalised way (Sloboda, 2005). Drawing on their past experiences, preferences, and needs, listeners develop bespoke self-prescription strategies which depend on their specific purposes and contexts, their existing mood, and health difficulties. Indeed, one of the most important functions of music preference is to express personal identity, attitudes, and values, and choice in music represents for the listener who they are in that moment (Elvers et al., 2015; Knobloch, 2003; North and Hargreaves, 1999a; Pavlicevic and Impey, 2013). Like Lina mentioned during her interview, music preferences can in fact reveal personal qualities, and even characteristics such as political views or reading and TV habits (North and Hargreaves, 2007a; Pettijohn, 2009; Rentfrow and Gosling, 2003; North and Hargreaves, 2007c). In addition, Annie listens to happy music to lift her mood, but Peter seeks music that matches his mood, which, in difficult times, is soulful and depressing music. Therefore, while precise self-prescription seems to be used across all participants to fulfil a wide range of needs, what music is used, why, and how, is highly personal. Similarly, No Music Moments were present in all participants' lives, although with different frequency and duration. While these findings suggest particular reasons behind No Music Moments, such as negative situations and health difficulties, the gravity of a situation that might require a break from music listening, and the person's "tolerance" to music in those situations, differ between listeners. Peter and Miguel, for example, listen to music when they are sad, but Lina and Amanda prefer a No Music Moment, and go back to music once they

have found a solution to the issue. When ill, Luciana doesn't listen to music, whereas Gwen and Peter use music consistently and specifically to help manage their symptoms. Indeed, literature suggests that certain listeners seem to be helped more by music than others, depending on different cognitive styles, regulation strategies, or their emotional reactivity (Chin and Rickard, 2014; Groarke, 2017; Kreutz et al., 2008). For example, highly emotionally reactive people benefit more from emotion-focused coping strategies, such as listening to music, while others may benefit from focusing on problem solving (Groarke, 2017). The duration of No Music Moments can vary as well; Lina may not listen to music for a day or up to a week depending on the reason behind her decision, while Gwen once didn't listen to music for over a month, and Manos didn't listen to music for over six months when his parents passed away.

Listeners' learning journeys are highly individual as well. During their lifespan, the participants' needs change, as does their music listening, shaped by the passing of time and important life events. As Lina argued, as the listener changes so too does the music they need. This change and development is an important factor explaining and contributing to the overall individuality of music listening for wellbeing, as it is greatly influenced by external factors that differ between listeners. Indeed, the participants suggested that their listening practices are as unique as fingerprints. Existing findings on individual differences in music listening support the participants' views, and highlight links between music listening and numerous aspects of one's identity and life choices, such as personality, lifestyle and beliefs, and even physical aspects such as resting arousal and heart rate (North and Hargreaves, 2007b; Pettijohn et al., 2010; North and Hargreaves, 2007c). This uniqueness of music listening practices was very important for the participants, as they often described their music listening in comparison to that of others, in line with literature arguing that music is an important tool for expressing and communicating one's identity (Knobloch and Mundorf, 2003). In fact, for some listeners like Miguel, being different from others took on further importance, as certain music stopped helping him when it became popular. Therefore the uniqueness of music listening for wellbeing practices, and their various aspects discussed in Section 6.3.1.6, highlights the importance and degree of individuality in music listening for wellbeing.

The relationship between further aspects of life beyond music that influence and are influenced by music listening is also very personal, certain aspects of life being more connected with music for different listeners. For example, music listening has an important role in Lina's marriage, as she met her husband through their common music preference, which remains an important common interest. For Mario, music is in dialogue with his values and must express authenticity, and for Alessandro music by Tool is like religion, addressing his needs for spiritual meaning. While it is evident that music listening is in dialogue with many further aspects of life, the exact nature and

extent of this dialogue is very personal.

The listeners' MY Music is an essential and very individual wellbeing resource for listeners. MY Music is shaped by the listeners' unique learning journeys, and can prove extremely helpful to the listener, though potentially to that listener alone; it can range from italodisco music for Manos, to the *Hamilton* soundtrack for Gwen, and to *Don't Worry Be Happy* for Thomas. This uniqueness of MY Music prohibits blanket recommendations, as reflected in the Survey 2 participants' reluctance to offer music listening for wellbeing suggestions to others.

Music listening is individual and cannot be prescribed similarly to medicine, with practices and effects varying between listeners. It is recognised that even as children, listeners have developed unique patterns, with music being experienced as a different emotional stimulus between people, causing different reactions (Garofalo, 2010; Sims, 2016; Västfjäll et al., 2012). This individuality is even more important when discussing music listening for wellbeing in particular, as listeners should not be perceived in categories. The current findings support not only the individuality of music listening practices in general, but argue that each individual's music listening must be seen as unique. As Elvers et al. (2015) argue, listeners of certain musical style, and I would argue, listeners of a particular temperament, for example, should not be treated stereotypically as "x type" listeners. Furthermore, this individuality is seen as highly important in the context of health and wellbeing, a topic with limited presence in relevant literature. The listener's personality, self-views, and cognitive abilities shape their music preferences, differentiating them from others although these alone cannot explain such extensive individual differences (Rentfrow and Gosling, 2003; Vuoskoski et al., 2012). While age, gender, and nationality could, in theory, explain differences between group listening practices, very few such associations were found in Surveys 1 and 2, as discussed in Chapter 4. Individual difference in music listening for wellbeing seems to be linked, therefore, to further differentiating factors.

This tacit understanding that music listening for wellbeing is highly individual challenges the use of blanket recommendations of specific music for wellbeing enhancement, such as, for example, *Weightless*, developed to be the most relaxing song in the world (Passman, 2016). While the piece was created by sound therapists to slow listeners' heart rates, reduce blood pressure, and lower levels of cortisol, the listeners' associations were not taken into account. Seeing music listening for wellbeing as highly unique and personal like "fingerprints", in Beth's words, these findings highlight the need to move away from a one-size-fits-all model, with music listening for wellbeing governed primarily by each listener's expertise, their personal experiences, preferences, and needs.

7.2.2 Music listening for wellbeing is contextual

Music listening is used differently for wellbeing purposes based on the listener's context, which influences listening decisions and outcomes. The importance of contextuality in the relationship between music listening and health and wellbeing is reflected in six of the eight subordinate themes[2].

Certain contexts may be more conducive to helpful music listening than others in regard to dynamic music listening, as the listening context can affect whether dynamic listening aspects are felt as appropriate by the listeners at the time, potentially introducing a form of expressive suppression and leading to negative outcomes (Chin and Rickard, 2014; Franco et al., 2014). This could be the case when listening to music in public for Cala, as they feel compelled to sing along but don't want to disturb others.

Contextual factors, furthermore, are linked to variability in response and side-effects and risk, as the listener's mood and health and wellbeing, and the associated memories and experiences, can influence the listening outcomes (Belfi et al., 2015; McFerran, 2016). For example, the same music can make Samantha feel amazing one day and negative the next, depending on how she slept. Past listening contexts can become associated with particular music as well, as highlighted by Susanna, who now cannot listen to certain music that helped her during a traumatic event in the past. Similarly, following the passing of her mother, Annie can't listen to Elvis anymore, nor Eva Cassidy, nor her favourite song *Manic Monday*. These examples highlight that the impact certain music can have is not dependent on the music itself or the individual listener alone; past and current music listening contexts may influence listening outcomes towards being helpful or negative. Samantha explained the importance of the listening context, as certain songs associated with negative feelings and memories can bring back feelings of depression, hopelessness, and worthlessness, supporting similar findings by Sakka and Juslin (2018). The listener's context also matters; when the listener is distressed, depressed, or unwell, listening to music may be more likely to have negative effects (Beckmann, 2013; Dibben, 2017; Garrido et al., 2017; McFerran, 2016; McFerran et al., 2015; McFerran and Hense, 2017; McFerran and Saarikallio, 2014; Randall and Rickard, 2016; Saarikallio, 2010). The intensity of negative side-effects can also differ depending on the listener's context; when feeling well Rose can shrug off negative feelings from music listening, however if she was feeling unwell or upset she admits that she would be "in despair". Seeing the importance of contextuality in relation to potential side-effects and risk highlights that certain listening contexts and situations may carry more risk for listeners than others.

[2]The contextuality of music listening for wellbeing is reflected in the following subordinate themes: dynamic music listening, variability in response, side-effects and risk, self-prescription and No Music Moments, learning journeys, and MY Music.

The importance of contextual factors is recognised when looking at music preference between seasons, depending on perceived environmental security, or economic conditions (Greb et al., 2017; Krause and North, 2018; Pettijohn, 2009). The current findings further highlighted the importance of contextual factors for self-prescription practices overall, as highly informed by the listener's context, mood, and health difficulties, in order to ensure appropriateness and enhance the likelihood of positive outcomes. For example, when Gwen needs help with their chronic pain, they use short pieces of music that help them get through the moment, but when needing support with anxiety and PTSD flashbacks they choose immersive and extended pieces they can sing, such as musicals. Certain contexts and situations, furthermore, call for No Music Moments, in order to avoid side-effects. At such times, music listening may be seen as noise, not a priority nor a positive influence, as also found by Gebhardt and von Georgi (2015). No Music Moments are steps out of the listeners' routine, when music becomes negative or unwanted. While it depends on the individual when and why non-listening is chosen, as highlighted above, it is contextual factors that lead to this need and define the nature of the No Music Moment.

Listeners' learning journeys are also contextual, explicitly demonstrating how the development of music listening practices is influenced by external factors, such as the passing of time and life events. The context of each listener's life shapes their learning and, in turn, their music listening. Indeed, preferences and practices are influenced by the preferences and reactions of peers and parents, also informed by success and engagement with specific music (Miranda and Claes, 2009; Pettijohn et al., 2010; Saarikallio, 2010; Schäfer, 2016). For example, growing older, Samantha has chosen to listen to music that she associates with peace and love; Gwen explained that their chronic illness has made them focus on the daily things that give them purpose, one of which is listening to music; and Beth, following a near-fatal accident, began seeing music as a tool to reach others.

MY Music, the essential music listening wellbeing resource, is also highly contextual. Developed through the participants' learning journeys, it is influenced by their needs and preferences. While it can be helpful in – nearly – all contexts, according to the participants, it is the context around this particular body of music that supports it in this role and, in a way, affords it that power. MY Music has proven helpful for the listeners through time, it is familiar and safe and has strong emotional attachments, linked to positive memories and associations. For Thomas, it is music he used to listen to in Nigeria as a child with his father on their long drives to school, while Peter's MY Music reminds him of happier times when he was young and living in London. While the impact of MY Music seems to be more constant compared to other music and less influenced by the listening context, its affordances are due to the context in which it is developed, how it was used before, and the meaning behind it, context becoming

important in a different way.

Music listening for wellbeing is contextual, with listening practices and effects influenced by contextual factors. This is indeed recognised regarding music selection behaviours in general, however contextuality is highly important for music listening for wellbeing overall, though not always highlighted, with wellbeing outcomes often linked to intra-musical characteristics. Responses to music are linked to what music means and how it is perceived by the listener, emotion being culturally and socially constructed and mediated (Chamorro-Premuzic and Furnham, 2007; Garofalo, 2010; Moore, 2017). As McFerran (2016) highlights, music acts within the context of the listener's life, activating its potential. She argues that how, when, and where we listen to music is *at least* as important as the music that is chosen, as also highlighted by the current participants. These findings emphasise the importance of contextual factors for music listening for wellbeing, influencing both the strategies used and their outcomes, therefore, stressing that blanket recommendations are not appropriate, not between neither within listeners.

7.2.3 Music listening for wellbeing is adaptable

Music listening is a focused and precise tool, however, it is also highly agile and flexible, as reflected in all eight subordinate themes[3]. This adaptability is important in the context of health and wellbeing, as it increases the value of music listening as a wellbeing resource. On the other hand, however, its flexibility can also lead to unexpected or negative outcomes, and change in experience and impact.

Dynamic music listening adapts to each listener's needs and preferred ways of engagement, however, when situations require repression then this can lead to negative effects. This flexibility can also be linked to variability in response, as change in extramusical factors can result in change in outcomes. Certain music listening can become more relevant and helpful to a listener, as Miguel described with *fado* music, but it can also work in the opposite direction. It is this adaptability that allows the same music, particularly MY Music, to be helpful in a variety of situations, but it also means that music which has been helpful in the past can now have a negative effect, as also found by McFerran (2016).

Self-prescription practices strongly rely on this adaptability, with the listeners creating personalised listening routines and wellness initiatives, as also discussed by Krout (2007). Self-prescription is a precise tool, however its "power" is based on its ability

[3]The adaptability of music listening for wellbeing is reflected in the following subordinate themes: dynamic music listening, variability in response, side-effects and risk, self-prescription and No Music Moments, learning journeys, fingerprints, beyond music, and MY Music.

to adapt to the person's momentary needs, health-related or otherwise; the effectiveness of music relies on its adapting to the listener's state of mental health, highlighting that different strategies are required at different times (McFerran, 2016). For example, Thomas uses different playlists which contain different music for different needs. The playlist he listens to when he is feeling well is long and diverse, while the one he listens to when he is sad is short, as he expects prompt results. During these interviews, the participants called music a "pill", an "antidepressant", and the "saviour of the day". Unlike medicine, however, music listening for wellbeing is not administered in a blanket method, but is adapted to each listener and their contexts and needs. It is largely music's ability to address the listener's current needs that allows music listening to take that role for the participants' health and wellbeing. No Music Moments, on the other hand, represent the limits of the adaptability of music listening for wellbeing. While individuals adapt their listening to their own needs, there are certain times and situations when they cannot, or should not, use music listening; when taking a break from music may be a healthier strategy. For example, at times of mourning for Peter, Alessandro, and Annie, or when Luciana is feeling really ill. No Music Moments are an important way of "adapting" one's listening when needed, an essential exercise of control by listeners, which can also safeguard from potential side-effects.

Learning journeys further depend and build upon music's adaptability, with the participants highlighting this on two levels; music listening seems to accompany listeners throughout their lives, adapting to their identities and needs. Moreover, the change and development discussed in Section 6.3.1.5 emphasises how listeners use music adaptably as they change and grow. For example, Mario used to listen to music for entertainment when he was younger, but now he looks for the message in the music, his listening adapting to reflect and fulfil his new needs. Seeing how different music listening for wellbeing is between individuals, and its links to a range of different aspects of life beyond music, emphasises how much it can be adapted. Music listening is used differently by individuals, these differences defining one's own listening and representing who they are in that moment, differentiating them from others (Elvers et al., 2015; Garofalo, 2010; Knobloch and Mundorf, 2003; North and Hargreaves, 1999a; Pavlicevic and Impey, 2013; Rentfrow and Gosling, 2003; Vuoskoski et al., 2012).

MY Music is perhaps the most adaptable music listening for wellbeing resource. This body of music is used by listeners widely and flexibly, to address a wide range of needs, and can be helpful and appropriate in – almost – any situation. Preferred or favourite music is highly adaptable (Saarikallio and Erkkilä, 2007), however, MY Music goes beyond this; its adaptability allows it to be used at difficult times, for example, coming out of a No Music Moment or when the listener is unwell, but also to satisfy minor needs when required, such as wanting to cheer oneself up. MY Music, in fact, depends on and draws its power from this adaptability to fulfil needs ranging from low-level to

those of detrimental importance.

Music listening for wellbeing is highly adaptable, in accordance to the high levels of change in music listening found in Survey 2 (Chapter 4). The affordances of music listening depend and build on this adaptability, allowing music listening to play an important role in listeners' lives and wellbeing. Flexibility greatly contributes to the role of music listening in everyday life (Lonsdale and North, 2011; Randall and Rickard, 2016), as it can potentially be used for any need, and any music could possibly be used for wellbeing purposes by different listeners. On the other hand, this adaptability can also result in variability in response and side-effects, therefore requiring listeners to adapt their listening once again. Due to this, music listening must be approached as constantly evolving and adapting alongside the listeners themselves, with this change taken into consideration when exploring music listening for wellbeing, as well as when designing music listening for wellbeing tools and interventions.

7.2.4 Music listening for wellbeing is sophisticated

Exploring music listening for wellbeing, it became evident that the participants have a high-level understanding of the role of music listening in their lives, their personal listening practices, and their impact on their wellbeing. Indeed, for music listening to be helpful, the listener must be aware of their needs and how to use music to fulfil them. Further sophistication emerged when looking at the participants' developed music listening for wellbeing strategies. The sophistication of music listening for wellbeing is reflected in all eight subordinate themes[4].

The participants showed a high-level understanding of the multi-modality of music listening, which involves dynamic aspects such as singing, movement, or goosebumps, as well as their influence on the listening experience and outcomes. Not only is music listening not simply passive, but the participants were very much aware of this, describing in detail how they dynamically engage with music listening and how this contributes to their experience. Variability in response, alongside side-effects and risk, are linked to a range of factors which can affect listening outcomes, highlighting the sophistication of this relationship. The listeners' expertise, on the other hand, is demonstrated further by their understanding of this variability and its role in the relationship between their music listening and health and wellbeing, leading to them adapting their listening strategies and developing specialised strategies to safeguard from risk.

Self-prescription both involves sophisticated practices and requires sophisticated listeners. Self-prescription strategies are specialised, based on the listeners' understand-

[4]The sophistication of music listening for wellbeing is reflected in the following subordinate themes: dynamic music listening, variability in response, side-effects and risk, self-prescription and No Music Moments, learning journeys, fingerprints, beyond music, and MY Music.

ing of their needs and taking into account a range of factors, such as their existing mood and health conditions, as well as their personal preferences and experiences. In self-prescription, listeners make high-level executive decisions, selecting specific music listening to fulfil particular needs in the current context. They consider potential variability in response and risk, refer to their learning journeys, and assess what music listening is most likely to help. Furthermore, in the current research the participants were able to discuss and describe these sophisticated practices, outlining the rationale behind them in relation to their own health and wellbeing. Similarly, choosing to stop listening to music through a No Music Moment requires listeners to have a deep understanding of their needs and assess the potential risk in listening to music at that moment based on their past experiences, able to perceive that a break from music is needed. Following this, making the executive decision to return to music also requires the listener to choose an appropriate time and way to gradually ease back into the "normality" of music listening.

The listeners' sophistication is developed through their learning journeys. Becoming experts through experience, they have developed a deep knowledge of how and what music listening can address their needs, highly aware of how this develops alongside their lives and identities. Discussing these learning journeys, the participants offered rich insight into their personal process of developing self-prescription strategies, illustrating, for example, the sophistication behind decisions linked to change in music listening for wellbeing. Seeing music listening for wellbeing as being as unique as their fingerprints also highlights that listeners are highly aware of how their practices differ to those of others, and this is also the case when looking at the links between music listening and aspects of life beyond music. Finally, perhaps the most sophisticated music for wellbeing resource is MY Music. Both the development and effective use of MY Music requires the listeners to have a high-level understanding of their needs and how to fulfil them, and the impact of specific music listening.

Throughout the interviews, the participants presented a high-level awareness and understanding of their music listening practices, and their relationship to their wellbeing and impact. Furthermore, the practices and strategies they have developed based on this understanding are sophisticated and precise, yet adaptable, considering individual differences and preferences as well as contextual factors. Indeed, the interview participants presented high levels of musical sophistication, with their engagement with music listening contributing to the development of expertise, as also found by Greasley and Lamont (2011). They gave accurate and detailed accounts of their listening practices and experiences, and could be considered "expert" listeners, despite not having intensive musical training (Bigand and Poulin-Charronnat, 2006; Juslin and Laukka, 2004). The listeners are indeed knowing, feeling, reflexive, and self-aware actors, as Garofalo (2010) argues. While the level of awareness between listeners may differ, as

Saarikallio (2010) suggested, it is this sophistication that allows participants who are facing significant health challenges, as many in the current research did, to continue using music listening effectively to enhance their wellbeing, informing their expertise as musical self-medicators.

7.3 What the subordinate themes tell us about music listening for wellbeing

7.3.1 Music listening is not just listening

Music listening can include dynamic aspects, which play an important role in music listening for wellbeing as they can influence listening outcomes. While in many cases, music listening is studied and perceived as the listening alone, as discussed in Chapter 2, the multisensory and multimodal nature of music listening has also been recognised in literature, seen by many as a creative activity and form of performance in its own right (Herbert, 2012; Morrison, 2009; Schäfer et al., 2013a).

In the context of music listening for wellbeing, it is important that the role of these dynamic aspects is recognised, as they can enhance outcomes and indicate effectiveness. For example, dynamic aspects of music listening encourage emotional expression, confidence, and self-esteem, as also found by Creech et al. (2013). They are means for deeper engagement and comprise the listeners' part of the dialogue. Similarly to the current findings, von Georgi et al. (2008) discussed such active processes, for example singing in the shower or drumming one's fingers on the desk, as musical self-help behaviours that support mood regulation. Indeed, the relationship between music engagement and wellbeing is bidirectional (Weinberg and Joseph, 2017), and, therefore, the participants may engage more dynamically with music when the music is "working", this form of engagement becoming a positive indicator.

Existing literature recognises the importance of certain dynamic aspects. Chills and goose bumps, such as those that Alessandro experiences, can enhance the positive impact of music listening (Belfi and Loui, 2019). Moving along to music can allow deeper engagement, as the participants highlighted, and the movement itself can be a form of musical production, allowing self-expression, reducing emotion suppression, and enhancing wellbeing (Bigand and Poulin-Charronnat, 2006; Chin and Rickard, 2014; Weinberg and Joseph, 2017). Relating to the message in the music, like Thomas does with *Don't Worry Be Happy*, indicates an element of empathy, which can also enhance positive effects by putting the listener in the singer's shoes, as suggested by Elvers et al. (2017). In such cases, empathy and emotional contagion can intensify emotional reactions, allowing listeners to simulate emotional experiences and process their emo-

tions in a safe and controlled setting, enhancing positive outcomes (Eerola et al., 2017; Lynch and Wilson, 2018; von Georgi et al., 2008). In fact, music listening can direct the listeners' focus towards their own state of mind, with emotional reflection being an important step towards emotional regulation and mental and emotional health (Gross and Thompson, 2007; Shifriss et al., 2015; Skånland, 2011). However, while certain dynamic aspects of listening are recognised in relevant literature, their importance and role, as well as their diversity, is not explicit. In the current findings, their importance is further highlighted as the suppression of dynamic music listening can have negative implications. When Cala, for example, tries not to sing in social settings, this form of expressive suppression can lead to negative outcomes for the listener, as also found by Chin and Rickard (2014) and Franco et al. (2014).

Music listening for wellbeing is dynamic, and the processes discussed here can be an inseparable part of music listening, playing an important role in the relationship between music listening and health and wellbeing; they can enhance and indicate positive outcomes, while they may also lead to a negative experience when repressed, such as in public contexts. Furthermore, whether, when, and how the listener engages dynamically forms part of their individualised music listening experience. This must be taken into consideration when looking at music listening for wellbeing; it takes place within the listener's body and mind, and through processes beyond just listening, which are not secondary or incidental, but hold an important role in the context of health and wellbeing.

7.3.2 The effect of music can change even for the same listener

The wellbeing outcomes of music listening can change even within the same listener. However, music listening outcomes are frequently approached as static and definite in literature, often linked to intramusical characteristics through nomothetic approaches (McFerran, 2016). While the difference in effect between listeners is recognised, for example when discussing the difference between fans and non-fans of Death Metal (Thompson et al., 2019), the difference in outcomes in the same listener is seldom made explicit or explored. The variability in response discussed here plays an important role in the context of health and wellbeing, highlighting that music listening and its outcomes are not structural, static or constant, but reflexive and contextual. Indeed, music is not the "same" stimulus for different listeners, as they experience very different emotional reactions (Garofalo, 2010; Västfjäll et al., 2012), but it may also be a different stimulus for the same listener at different times as well.

Music listening outcomes are linked to the listeners' existing conditions and the music's associations, and can be unhelpful despite their expectations and intentions; music does not act independently and can vary between situations as much as between persons, as

also found by Greb et al. (2018) and McFerran (2016). The influence of the listener's existing condition and their wider health and wellbeing has also been highlighted by McFerran (2016), who argued that music listening outcomes can vary depending on where the listener sits on the continuum of mental, and I would argue also physical, wellbeing; the effectiveness of music relies on music adapting to their state of mental health, with different strategies required at different times (McFerran, 2016). Existing research, for example, suggests that people tend to listen to music for emotional reasons when they are in a negative mood and their wellbeing is poor (Randall and Rickard, 2016). According to Chin and Rickard (2014), using specific strategies, for example expressive suppression, can lead to not achieving intended positive outcomes, and music listening can prove less helpful when listeners are sad or stressed to begin with (McFerran et al., 2015; Sakka and Juslin, 2018). It is known, therefore, that listeners' existing conditions can be linked to music have different outcomes than intended.

The effect of a song can also change due to the way it is used. The use of certain music to help with difficulties can lead to it being associated with negative feelings, thus changing its effects, as found by McFerran (2016) and highlighted by Amanda and Susanna. Important life events can also influence the effects of specific music according to the participants, however, there is no explicit mention of this in relevant literature. Given the effect of the life events described, such as the death of a loved one, on one's wellbeing, these could lead to the listener starting off in a negative mental place, with outcomes also influenced by the newly developed negative associations with the specific music. This would explain, therefore, why Annie cannot listen to Elvis anymore as it feels like "walking on broken glass". As Susanna highlighted, music that was helpful in the past may result in re-experiencing trauma and negative feelings, a possibility also discussed by Belfi et al. (2015).

The variability in response within the same listener highlights the reflexive nature of music listening and the significance of influencing factors beyond individuality. This is important in the context of health and wellbeing as past effectiveness cannot guarantee that certain music will help, leading to change in self-prescription practices; otherwise, once listeners found the music that helped them, they would always listen only to this. Within-listener variability is an important aspect of music listening for wellbeing, an element that drives development and change.

7.3.3 Listening to music can be harmful

Music listening can have negative side-effects for listeners, influencing their further use of music listening for wellbeing and putting its outcomes at risk. As discussed in Chapter 2 and argued by McFerran and Hense (2017), relevant literature often focuses on the positive effects of music listening with no mention of negative side-

effects. While Eerola et al. (2017) argued that music listening provides a safe and controlled setting, the interview participants highlighted that this is not always the case; music listening can be harmful and traumatic, with negative outcomes ranging from minor to detrimental.

Music listening side-effects seem to depend on the music listening context and the listener's previous experiences, as also suggested by McFerran and Saarikallio (2014). Control and preference are important when discussing side-effects and risk. There is extensive literature on the positive effects of listening to self-controlled and self-selected music, both for specific medical populations, for example chronic pain patients (see Mitchell et al., 2007), and the general population (see Krause et al., 2014a). Self-controlled music is related to positive experiences more so than under the control of another, and on the other hand, music that goes against one's identity may be experienced as disruptive, rejecting those who don't belong (Garofalo, 2010; Greasley and Lamont, 2011; Krause et al., 2014a). However, even though it is recognised that low or lack of control may be associated with negative consequences (Krause et al., 2014a; Sloboda, 2010), there is limited literature explicitly discussing the potential negative wellbeing effects of imposed music in the context of everyday life, as discussed by the current participants.

It is not only control and preference that is linked to negative impact, however, otherwise side-effects would be relatively straightforward to anticipate and manage. As Groarke (2017) highlighted, there is an important distinction between the intended listening effect and the outcome the listener actually experiences. Listening to one's preferred music can also have negative outcomes, which can be unexpected and reflect the variability discussed above. For example, music that has been helpful in the past, can now evoke vivid negative memories and emotions due to new associations (Belfi et al., 2015; Eerola et al., 2016; Vuoskoski et al., 2012). Accordingly, Sakka and Juslin (2018) suggested that listening to music that is linked to one's depression can be harmful, as also seen, for example, in Samantha's account. However, while Sakka and Juslin (2018) focus on sad music, I argue that this extends to any music associated with negative emotions and experiences in the listeners' lives, independently of its inherent "sad" or "happy" qualities.

The listener's existing emotions can also lead to negative effects. Listening to music when distressed or at a low wellbeing point may mean that otherwise helpful strategies are unsuccessful, the listeners engaging in maladaptive behaviours, such as rumination, venting, or suppression, using music listening to maintain or deepen their negative state (Dibben, 2017; McFerran and Saarikallio, 2014; Saarikallio, 2010; McFerran et al., 2015). For example, when depressed, listening to music can make people with mental illness feel worse (Beckmann, 2013; Garrido et al., 2017; McFerran and Hense, 2017; Randall

and Rickard, 2016). Indeed, this could also be the case for the general population as well; when not feeling well, music may simply not be as, or at all, helpful for certain listeners.

The potential negative side-effects and risk associated with music listening are important in the context of health and wellbeing. Music listening can indeed lead to negative wellbeing outcomes, and while side-effects may be somewhat predicted at times, the risk is never fully mitigated. Importantly, though, despite these potential side-effects, the participants maintained that music listening helped them and continued to use it to fulfil a range of needs.

7.3.4 Music listening for wellbeing is a precise tool

Music listening is used by the participants as a highly specialised and precise tool to fulfil a wide range of wellbeing needs, as seen through their self-prescription practices, including No Music Moments. Indeed, some participants described music listening in medical terms, such as a "happy pill" or an "antidepressant in the bag", drawing an analogy between music and medication, as discussed by Chanda and Levitin (2013). The listeners' self-prescription practices allow them to design their personalised music listening routines and actively take part in their own wellness initiatives, as found by Krout (2007). Self-prescription practices build upon the listener's control and take advantage of their expertise and knowledge, minimising, though not fully eradicating, potential risk.

The listener's existing mood and current health and wellbeing needs play an important role in self-prescription, the listeners choosing music that matches their intended or current mood, as well as according to their health and wellbeing needs. Saarikallio (2010) found that listeners use different music when feeling down, similarly to the current participants; listeners like Annie may choose music to match their intended mood, listening to happy music in a deliberate and active effort to repair bad mood through emotional contagion, mimicking inwards the expressions of the music (de la Torre-Luque et al., 2017; Juslin and Laukka, 2004; Juslin and Västfjäll, 2008; Shifriss et al., 2015). On the other hand, listeners like Mario, Douglas, Peter, and Debbie may seek comfort in mood-congruent music, as also found in other research (see Knobloch and Zillmann, 2002; North and Hargreaves, 1996; Thoma et al., 2012b). Douglas explained how sad music "aestheticises" his feelings, its effects explained in terms of pleasure drawn from the appreciation of the music and disassociation from the negative emotion (Eerola et al., 2017; Vuoskoski et al., 2012; Thompson et al., 2019). Sad music can evoke positive memories, enhancing the listeners' mood, but may also allow expression and emotional release, leading to improved mood and a long-term feeling of pleasure, with more reflective listeners using sad music to come to terms with events in their

own lives, such as Peter described following his cancer diagnosis and treatment (Garrido and Schubert, 2011; McFerran, 2010b; Shifriss et al., 2015; Garrido and Schubert, 2013; Van den Tol and Edwards, 2015). Listening to music that matches their mood, these listeners can gain a better understanding of their internal states, allowing them to take a stepwise approach in changing their moods for the better, as attempting to change their mood all at once by listening to "happy" music would be unsuccessful (Skånland, 2013; van Goethem, 2010).

As music listening is a precise tool, choosing the "right" music is highly important, however, the participants recognised that the process is far from straightforward. Different situations and needs require more or less specialised music, with different strategies used at different times. Indeed, the participants described their specific use of music listening to satisfy particular aims, portraying a deep understanding of its effects. They are active consumers, manipulating and choosing their music to fulfil specific needs, as described by Krause and Hargreaves (2012). However, while sometimes the listener knows exactly what music they need, as "a reflex" as Peter said, sometimes they must actively search for the right music, often through a trial and error process. von Georgi et al. (2008), in fact, suggest that the process of selecting specific songs is in itself a musical self-help behaviour. The function behind music listening can dictate what music is chosen, but this association is not between specific uses and types of music per se, as particular music and genres are not necessarily linked to mood enhancement (Greb et al., 2018; McFerran, 2016; McFerran et al., 2015). Rather, differences in preference, personal musical taste, and the value the listener places on the music can lead to using very different music to fulfil similar needs (Greb et al., 2018; Lamont, 2017), as highlighted by the current participants. This could be because music can have different effects on fans and non-fans; listening to Death Metal, for example, can enhance wellbeing through helping with mood regulation, discharging anger and providing distraction, but this is restricted to fans of the genre (Laukka et al., 2013; Sharman and Dingle, 2015; Thompson et al., 2019). Furthermore, when listeners identify with lyrics, their personal experiences contribute to the comforting effect of the music (Lippman and Greenwood, 2012; Saarikallio and Erkkilä, 2007; Ter Bogt et al., 2016).

Choosing not to listen to music can also be a precise strategy, which is used at difficult times with specific expectations. With music listening being so omnipresent, as discussed in Chapter 2, purposefully choosing *not* to listen to music is equally important as other music listening practices, as the other side of the music listening coin. In this research, the participants discussed the situations during which they could not, or strategically decided not to, listen to music, pointing to a gap in existing literature. As music listening and engagement are often seen as wholly positive, the purposeful choice not to engage with music is hardly addressed in scholarly work.

Similar to listening to music, choosing to not listen is an active decision. Listening to music activates the emotion system, can adjust the listener's mood to external circumstances, such as a funeral, and demonstrates willingness to get in touch with their feelings (Knobloch, 2003; Saarikallio, 2010; Shifriss et al., 2015). Choosing not to listen to music, therefore, could potentially suggest that the listener is trying to safeguard themselves from their feelings, which could be overwhelming, unpredictable, or difficult to control in certain situations, such as those described by the participants, with listeners potentially preferring to process their emotions on their own terms without the interference of music.

Indeed, No Music Moments are often chosen at the most difficult times, with listeners preferring silence or quietness. At these times, music may be seen as noise (Kennaway, 2012), but while McFerran and Hense (2017) argue that avoiding music when distressed is unhelpful, the current findings emphasise that avoiding music can indeed be a wellbeing strategy, and that it is important for the listeners to be able to choose non-listening. As Dreikurs (1954) highlights, anyone who does not want to listen to music is not affected in any positive way by it. Therefore, while removing music is not *necessarily* helpful, it must remain an option. Indeed, there are times when controlling one's sonic environment through self-prescription isn't enough - it "doesn't cut it", as Samantha explained - then the music must be turned off. Certain situations have been linked to listeners turning off music, such as in warm weather, or due to workplace requirements (Haake, 2011; Schurig, 2018). Listeners have also been found to turn off the music when focusing on a task or when it could prove directly dangerous, such as when walking or driving (Cassidy and Macdonald, 2007; Schurig, 2017; Yamasaki et al., 2018). While these findings offer insight into contexts in which music listening isn't preferable or appropriate for some listeners, it is not only external factors that play a role, as internal factors can be equally important. Following the onset of a mental disorder, for example, some listeners stop listening to music completely (Gebhardt and von Georgi, 2015). In agreement with the Virtuous Cycle found in this research, discussed in Chapter 5, Gebhardt and von Georgi (2015) reported that those who stopped listening to music had rated music as less important and believed it affected their mental state negatively. On the other hand, those who continued to listen to music, despite their mental health diagnosis, rated music as important for themselves and their families, believed music would help them, and had experienced positive effects in the past (Gebhardt and von Georgi, 2015). Similarly, in the current research, the interview participants chose No Music Moments when they felt that music wasn't that important, or they believed it carried increased risk. Furthermore, when discussing times when music was unhelpful (Chapter 4), most Survey 2 participants expressed their doubt that music could help, another reason to choose not to use it.

When listeners believe they may be negatively affected by music listening they choose

a No Music Moment. In these instances, choosing to not listen to music can be an expression of the listener's control, allowing them to avoid risk. Given the importance of control, and the link between lack of control and side-effects, switching off the music may be strongest expression of control over one's listening and an effective safeguarding strategy. On the other hand, however, life is overwhelmingly associated with the presence of sound and silence can be seen negatively (Bassett et al., 2018; Sutton, 2006). No Music Moments may be necessary for some listeners at certain times in their life, but they are, nonetheless, a step out of everyday life for the participants, seen as a pause to think, process emotions, grieve, or heal. Gradually, and when ready, they go back to listening to music, stepping back into normality.

Music listening is used as a precise tool through self-prescription practices, which are based on the reciprocal relationship between music listening and health and wellbeing. These strategies highlight the importance of finding the right music and the range of factors that listeners take into consideration. A further music listening strategy discussed by the participants is choosing a No Music Moment, suggesting that the important role of music listening may at times, in fact, rely on the possibility of *turning off* the music.

7.3.5 Listeners learn how to use music and their listening changes

Through the interviews, it became evident that the participants learned how to use music listening for wellbeing, based on their experiences and the development of advanced understanding of this relationship. Listeners' preferences and needs change, as well as their approach towards music listening, its use, and effects. While change during the lifespan may be considered natural, its role in the relationship with health and wellbeing is not extensively discussed in literature, despite the importance of specific practices and music preference, and the risk associated with non-preferred music.

Learning how to use music listening for wellbeing purposes is very important, as the more listeners use it the better they get at doing so (Skånland, 2011). Music listening experience can make individuals highly sophisticated and expert listeners, without requiring formal music training (Bigand and Poulin-Charronnat, 2006). The Virtuous Cycle presented in Chapter 4 suggests that listening behaviours are guided by belief in the effects of music and expectations developed through past listening experiences, as also found by Groarke (2017), highlighting the role of past experience and belief in the "power" of music. To begin with, listeners are often influenced by the preferences and reactions of their peers and parents, in time developing their own preferences and practices as they mature (Miranda and Claes, 2009; Pettijohn et al., 2010). With age, listeners acquire an increasing amount of knowledge about music's power, building their belief in the positive effects of music listening (Saarikallio, 2010). Music listening,

in time, becomes more intentional, as highlighted by Gwen, with listeners developing more specific preferences. Learning how to use music is also affected by events in the listener's life. For example, situations such as first love in young adulthood or difficult life experiences can bring about event-related change and development (Saarikallio, 2010). In this way, the listener's personal life story can contribute to change in understanding emotions and meanings in music (Eerola et al., 2017). Indeed, the current participants seem to have been using music listening more subconsciously to begin with, and gradually learned through trial and error how and what music listening can help them, investing time and effort to learn how to use it intentionally as a precise tool. As the participants explained, music listening seems to become more effective through learning, practice, and self-reflection.

These learning journeys are highly significant in the context of health and wellbeing, as the value of music listening for wellbeing depends on the listeners' developed ability to use and control it, as also found by Krause and North (2014a). Despite this, as discussed in Chapter 2, music listening and listeners are often approached as static; in Music Psychology research listeners are often asked to report their practices and preferences, with ties drawn to their personalities, behaviours, or diagnoses (see Greenberg et al., 2015), and it is rarely acknowledged that these findings are a momentary "snapshot" subject to change and development. On the other hand, the learning process discussed by the current participants highlight that listeners and their practices should not be approached as static and seen outside the context of their everyday life, as they are constantly developing through a reflexive process. Music listening for wellbeing involves continuous learning, therefore allowing for the potential development of a positive approach towards music listening through, for example, formal or informal education, enhanced awareness, and facilitated reflection.

7.3.6 Certain music is an essential wellbeing resource

A certain body of music, described in this thesis as MY Music, is highly important in the context of health and wellbeing, as it is used by the participants as an essential personal wellbeing resource that – nearly – always helps. Despite the potential risk and change in effects of specific music, the participants described an essential, constant, and reliable musical resource, their MY Music, which holds great significance in their lives.

MY Music is familiar and predictable, providing listeners with the same experience each time, as medication would, however it is differentiated enough to feel new and exciting as well. In line with the Virtuous Cycle discussed in Chapter 5, the listeners believe that their MY Music will help them, it is important in their lives, and it has helped them in the past, these factors linked in turn to increased positive outcomes. In fact, this body of music holds a special role for listeners, characterised by its importance and value,

rather than its genre or other intramusical characteristics. Hence, MY Music differs greatly between the participants, shaped by their life experiences and preferences, and a result of their personal learning journeys.

MY Music is strongly linked to the listeners' lives and preferences, it is tied to memories and has helped them through difficult times in the past. This is in agreement with findings regarding the importance of memories and familiarity, as musical emotions become richer the more one listens to a piece (Bigand and Poulin-Charronnat, 2006; Elvers et al., 2015; Hanser et al., 2016; Schäfer and Eerola, 2018). This may be a similar effect to that described by Loveday when analysing people's desert island disk choices, with listeners often gravitating to tunes from their teenage years, due to what she calls a "reminiscence bump" (Loveday, 2017). MY Music, furthermore, is linked to the listeners' identities, relationships, and important life events, for example, some of Samantha's MY Music reminds her of happy childhood moments with her parents. MY Music is made stronger over time, the listeners developing personally meaningful relationships with particular songs that allow their affection to persist despite frequent listening, as suggested by Conrad et al. (2018). Long-term exposure to certain music can lead to increased sensitivity to genre-specific psychological, physical, and emotional signals (Lamont, 2017; Thompson et al., 2019), and this may be the case with MY Music; it has been in the listeners' lives through time and difficulties, its power seemingly strengthened by its effective use in the past.

The importance of MY Music for health and wellbeing takes on further significance for listeners who are facing health difficulties. The Survey 2 findings, discussed in Chapter 5, suggested that listeners with health difficulties were more likely to suffer negative outcomes, with existing negative conditions increasing the likelihood for variability in response and negative side-effects. Despite this, MY Music was described by even the most unwell of the interview participants as beneficial in enhancing their wellbeing, helping them through particularly challenging times. This suggests, therefore, that the relationship between music listening and wellbeing may rely less on frequency and duration, or genre and medium of listening, for example, and more so on the body of music that is chosen and the listener's mind-frame towards music listening. The role of MY Music relies more on the listener's relationship with the pieces and less on the musical content itself, suggesting that different bodies of music can have very different roles for wellbeing, with MY Music holding an even more important role at difficult times. Despite the increased availability and high prevalence of music, certain music is still important to listeners, as also found by North et al. (2004). Despite the virtually infinite amount of music available to listeners nowadays, it is still this relatively small body of specific music that is of the highest importance and can be the most helpful at difficult times. This, furthermore, challenges the argument that music listening has lost value due to its omnipresence through digitisation, piracy, and streaming services, mu-

sic being replaced by a constant stream of sound (Marshall, 2019; Mulligan, 2017). The use and importance of MY Music argues that a personal music library is more than just "mytunes" (Krause and Hargreaves, 2012); it is an essential personal wellbeing resource rather than a simple commodity.

7.4 Summary

This chapter discussed music listening for wellbeing in light of the interview findings. The individuality, contextuality, adaptability, and sophistication of music listening for wellbeing were initially discussed, based on the four superordinate themes. Individual and contextual factors greatly influence the choice, use, and impact of music, with music listening adapting to the person's momentary needs. Furthermore, music listening for wellbeing is sophisticated and precise, with listeners showing high-level understanding of the relationship between their music listening and health and wellbeing. What music is chosen, and its impact, is influenced by the listener and the listening context, adapting to current needs and conditions.

Key points from the subordinate themes were also presented. Music listening is dynamic, its effect differing at times even for the same listener and carrying potential negative side-effects and risk. Despite this, listeners continue using music as a precise tool for wellbeing purposes through self-prescription, and when music is unhelpful, they turn to No Music Moments. In this context, what becomes highly significant is that the nature and effect of music listening is shown as personalised and individual, learned and developed in unique ways within the context of the listeners' lives. Participants have described highly positive and negative experiences with music listening in the same situations. Furthermore, while for some music listening may not be able to help in a very difficult time, for another listener it can be greatly helpful, and vice versa. The variability in response, the potential side-effects of music listening, and the requirement for No Music Moments do not diminish the significance of music listening as a health and wellbeing tool. Rather, this highlights that listeners see music listening as highly beneficial despite these. MY Music was also discussed, as an essential, reliable and safe music wellbeing resource that – nearly – always helps.

Overall, these findings support the benefits and wide use of music listening for wellbeing by a wide range of listeners in diverse situations, afforded through music's adaptability. However, these findings suggest caution against approaching music listening for wellbeing without significant consideration of individuality and contextuality, nor the possibilities afforded by adaptability or the potential risks. Demonstrating the variability and side-effects of music listening, the need for No Music Moments at times, and the importance of individuality, contextuality, and personal preferences, these findings urge

against a one-size-fits-all model of music listening for wellbeing. Furthermore, music listening for wellbeing should not be approached outside the context of the listener's life and without consulting their expertise. These findings emphasise that listeners can and should have a role in developing their music listening for wellbeing, as highly sophisticated self-medicators with unique expertise.

The next chapter pulls together the quantitative and qualitative findings, introducing the proposed Adaptive Music Listening And Wellbeing model.

Chapter 8

The Adaptive Music Listening And Wellbeing model

8.1 Introduction

This chapter provides further insight into the relationship between music listening and health and wellbeing, by bringing together main findings from the surveys and interviews and presenting the Adaptive Music Listening And Wellbeing (AMLAW) model, which focuses on what music listening for wellbeing looks like at three different wellbeing points; at listeners' "unhealthy", "average", and "healthy"[1] times. Then the model is discussed considering the four superordinate themes, highlighting how adaptability, individuality, contextuality, and sophistication are reflected in the AMLAW model.

8.2 The Adaptive Music Listening And Wellbeing model

The Adaptive Music Listening And Wellbeing (AMLAW) model, seen in Fig. 8.1, reflects the bidirectional relationship between music and wellbeing (Weinberg and Joseph, 2017). It draws on and further develops the listener profiles presented in Chapter 5. These listener profiles were based on the statistical associations between specific music listening behaviours and reported higher or lower health and wellbeing in Survey 2. They were presented as healthy, average, and unhealthy listener profiles, suggesting that healthy and well, average, or unhealthy and less well listeners are more likely to listen to music in different ways that may be characteristic of different health and

[1] The three wellbeing points refer to health and wellbeing overall, and not only health, but are referred to this way for ease of communication.

wellbeing levels. In this model, however, the listener profiles are seen not as different listeners, but as listeners at different wellbeing points; rather it is music listening at unhealthy and less well, average, and healthy and well moments. The unhealthy and less well listener, for example, may be facing health difficulties at the moment and is, therefore, placed close to the left side of the health and wellbeing continuum, as discussed in Chapter 5. The healthy listener is one who is healthy and well at the time, facing no significant difficulties, and the average listener represents someone who is experiencing an average day, who feels like they usually do, not significantly well or unwell. These states are experienced at different times by the same and every listener potentially, reflecting three sides to their music listening.

Another aspect of the AMLAW model is the use of different bodies of music at different health and wellbeing points found during the interviews, indicating that certain music may be used precisely based on the listener's wellbeing. The three wellbeing states, unhealthy and less well, average, and healthy and well, are linked to different times of the listeners' lives and also associated with choosing to listen to different bodies of music. The listener profiles highlighted differences in music listening behaviours regarding aims and contexts, in Chapter 5, and the listeners choose to use a different body of music based on how they are feeling at the time, namely where they are based on the health and wellbeing continuum. Thus, the AMLAW model connects the different bodies of music used, with the differences in other music listening behaviours, highlighting how the listeners make use of sophisticated strategies and altogether different music listening based on their health and wellbeing state and needs.

8.2.1 Choosing the right music: Different music for different wellbeing levels

Looking at music listening through the eyes of the current participants, it exists in dialogue with their health and wellbeing, and their music listening choices cannot be seen outside of this context. Listeners use different music at different times and wellbeing levels, as outcomes differ and there is increased risk when they are feeling less well, as shown in Fig. 8.2.

The current research suggests that the path of salutogenesis[2] is mirrored in music listening choices; listeners, therefore, move through using specific bodies of music as they move from a situation of ill health and significant difficulties towards a more comfortable situation and higher wellbeing. When listeners are feeling averagely well and are dealing with minor challenges, they use self-prescription to address these needs, such as needing help to focus or motivation. When their wellbeing is higher than average

[2]Salutogenesis is the movement towards higher health and wellbeing (Antonovsky, 1996), as further discussed in Chapter 2.

Figure 8.1: The Adaptive Music Listening And Wellbeing model.

and there are as few difficulties as possible, listeners are more open to exploring new music, potentially also listening to music that they have not chosen themselves or that they may even dislike, as in this context there is less likelihood of negative side-effects and risk. On the other hand, however, when listeners need to cope with significant difficulties and simple self-prescription isn't helping, they turn to their MY Music, the constant and safe resource that carries minimal risk. In the most dire situations and when MY Music can't help, listeners may choose to take a break from music, through a No Music Moment. Once the situation is processed or they feel hopeful again, as described by Rose for example, the listeners ease back into music listening and normality through their MY Music. Once significant needs have been addressed, therefore, listeners can once more move towards listening to a wider body of music, once more using self-prescription of preferred music to address particular needs, and even potentially seeking to discover further music they may like.

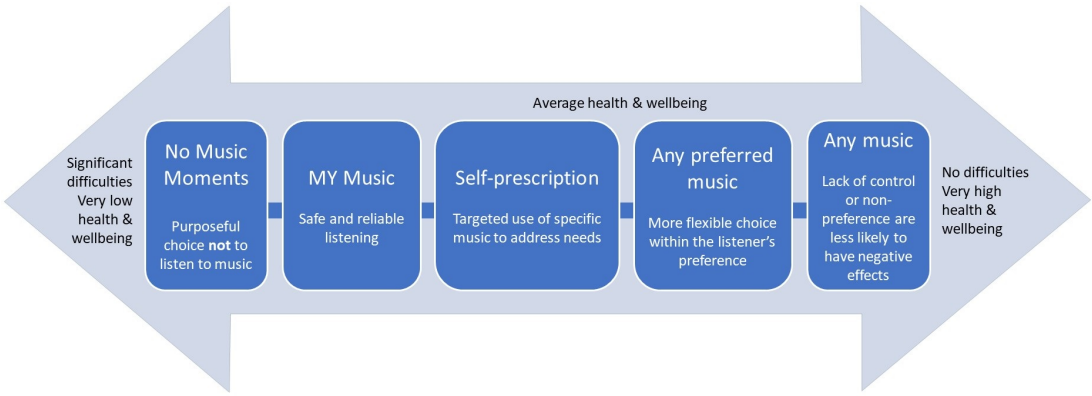

Figure 8.2: The use of different bodies of music at different wellbeing levels according to the AMLAW model.

Music listening choices can also fluctuate around significant positive and negative life events. Fig. 8.3 presents how bodies of music may be used around positive or negative events in one's life, resembling a heat-map format. Important positive and negative life events are seen in this context as wellbeing-enhancing or wellbeing-reducing, for example, the listener being in love on the one hand, or a loved one's death on the other.

Contextual factors, such as these events, play a role in the choice of music, and the reciprocity of the individual and the social world must be taken into account, as argued by Greasley and Lamont (2006). The link between preference and the listener's life environment has been noted in existing research. For example, listeners' preferences seem to change between seasons, preferring arousing music in spring and summer (Krause and North, 2018). Furthermore, listeners prefer more mature, reflective, and meaningful social stimuli when environmental conditions are threatening, reflecting the listeners' living conditions (Pettijohn, 2009; Pettijohn and Sacco, 2009). Based on the

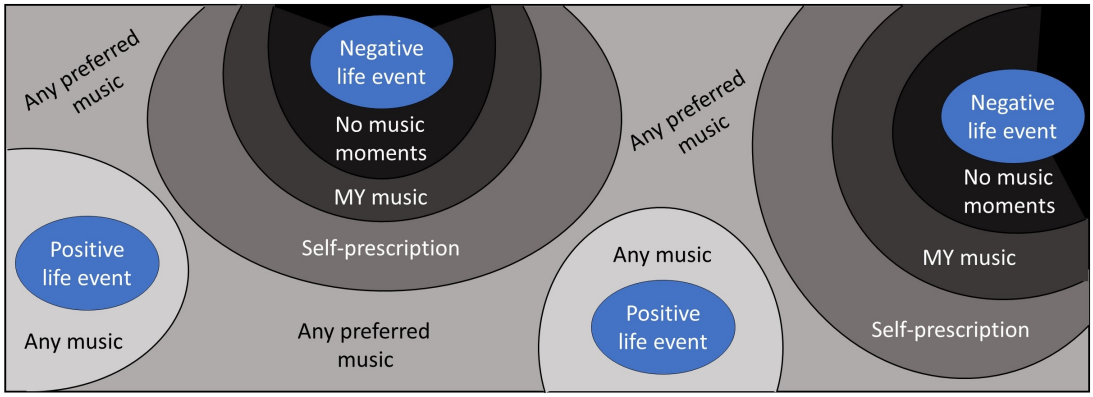

Figure 8.3: The use of different bodies of music around life events according to the AMLAW model.

current findings, I suggest that at certain times listeners may choose, or need, to listen to a certain type of music to help manage their everyday challenges, however, this does not mean that they now dislike fun upbeat music, for example, rather that it would not be helpful to use at that point in their everyday life and under the given conditions. Change in use is not necessarily linked to change in preference, but could rather reflect a change in current wellbeing, or other, needs.

The AMLAW model, therefore, suggests a more nuanced approach towards music preference. The use of music varies across the wellbeing continuum, with different strategies, and I would highlight specifically, different music required at different times. According to this suggested use of different bodies of music shown in Fig. 8.2 and Fig. 8.3, music preference is not seen as binary - liking or disliking certain music - rather as a scale of different levels of preference, as recognised by Elvers et al. (2015), but also of different appropriateness based on one's health and wellbeing. The current participants chose music from a wider pool when feeling well, whereas when they were unwell and facing difficulties they turned to their MY Music, their safe and reliable musical resource. Similarly, McFerran (2016) found that listeners tend to use preferred music of any genre when in a positive state of mind, but at times of distress they turned to music they had previously found helpful. I suggest, therefore, a link between the role and level of preference and the intended wellbeing function, similar to what Schäfer et al. (2013b) have suggested regarding everyday music listening functions. Hence, while the benefits of music listening are seen as linked to the levels of the listener's preference for the particular music (Elvers et al., 2015), I propose that this may not always be the case, with positive effects resulting from non-preferred or unknown music, but only when the listener is experiencing higher wellbeing.

A further important element in the AMLAW model is the listener's perceived level of control, whether this is controlling what music they listen to or choosing to give away

this control, for example listening to the radio or music in public. In agreement with Krause and North (2015), seeing control as binary, "control" and "no control", is shown to be too simplistic. The current findings suggest that different levels of control may be more appropriate at different wellbeing levels, with control approached as a gradient, similarly to preference discussed above. Control over the music experience can promote wellbeing and lack of control may detract from wellbeing, as Krause and North (2014a) argued, but with increased control being more critical when one is feeling unwell and vulnerable.

The AMLAW model highlights, therefore, that any music could be helpful at a particular time for a particular listener. Music listening outcomes depend more on the individual's wellbeing than the music genre, greatly influenced by their personal preferences and the value they place on the music, as also suggested by Lamont (2017). Thus, this is often how music listening is approached by the listeners, despite the music industry's categorisation into genres and styles (Krause and Hargreaves, 2012; McFerran et al., 2016). Music should not be seen as a stimulus leading to predictable responses, and listeners have indeed been found to focus more on what music means to them rather than its genre (de Boise, 2015; Ruud, 2008). Accordingly, playlists are increasingly defined by non-musical factors and based on events and activities, such as mood (Marshall, 2019). Kassabian (2013) sees this as representing the devaluation of music, with listeners being dissociated from specific generic characteristics of the music, becoming ubiquitous listeners. Looking at the current findings, however, I would argue that this does not represent devaluation at all, rather reflects how listeners use music in everyday life more flexibly, with the influence of genre not being that high, as also argued by McFerran et al. (2016).

Any music can be helpful in general, but different wellbeing needs call for different music. Listeners may now have access to a virtually infinite pool of music; however, specific bodies of music have a particular meaning and role in their lives, and the most important role is held by a limited and contained body of music: their MY Music. The difference is that with the introduction of technology that allows listeners to easily access, modify, and create playlists, music is now easier to curate and is seen beyond its intramusical characteristics. These findings suggest that listeners *do* want to listen to specific pieces, especially during difficult times, however, it may be that these are not defined by genre or tempo, for example, but comprise one of the specific bodies of music discussed here, highlighting the importance of the listener's relationship with the specific music and its value for them. Furthermore, listeners seem to adopt a more ubiquitous approach when they are feeling more well and there is less risk of suffering negative side-effects; ubiquitous listening may, therefore, be a further aspect of the adaptability of music listening.

8.2.2 Music listening at unhealthy, average, and healthy times

8.2.2.1 Music listening at unhealthy times

When the interview participants are going through physical or mental health challenges, are facing significant difficulties or important negative events in their everyday life, they sit at the left side of the health and wellbeing continuum. During these unhealthy and less well times, they choose what to listen to from three different bodies of music, depending on how significant the difficulties they are facing are; if they are seeking to fulfil certain needs and they feel close to average, they will employ self-prescription, listening to specific music to address these needs, for example to lift their mood if they're feeling slightly low. If the listener is feeling more unwell and has significant difficulties, including times when self-prescription has failed, they will employ their MY Music, a smaller body of music which they know will always help them, their safe and reliable option. At the extreme left end of the continuum, when the listener is at their lowest point, they may decide to take a break from music listening, as it may be unhelpful and not a priority at the time.

This use of music listening when unwell was also supported by the Survey 2 data. When unwell, listeners were more likely to use music to reduce negative affect and states. They seek social, psychological, and physical support, as well as distraction, to cope with difficulties. They listen to specific, preferred, and self-chosen music, purposefully selected and organised, and music listening takes place mainly in isolation or alongside a small number of activities. Indeed, self-prescription and MY Music are comprised by music that is preferred, purposefully, and specifically chosen, and can provide such support, with the listeners mainly describing listening to this music on their own.

At unwell times, there are further differences in music listening for wellbeing. When feeling unwell, the listeners' Virtuous Cycle is more likely to be lower than when well (Survey 2), for example the belief in the positive impact of music listening and the importance of music. Indeed, this was also seen in the interviews, where participants explained that when unwell or dealing with difficulties music may not be a priority, as they have other things on their mind. When unwell, music listening is still frequent, as shown in Survey 2, but less frequent and for a shorter duration than when well. Similarly, the interview participants highlighted that listening to music requires head-space, which may be limited when unwell, and could restrict music listening to a shorter duration, as highlighted by Thomas' short playlist for when he's feeling low, versus the much longer playlist for when he's feeling happy and well. Furthermore, the participants described self-prescription when unwell as targeted, and they would therefore expect prompt outcomes by listening to music for a limited time. It could be said, then, that MY Music and self-prescription, aiming to satisfy specific needs in a precise way, are administered for an exact duration according to listeners' expectations, and may not

require highly frequent or extended music listening; the listener knows what they need to listen to (to an extent) and what the aim is. If the aim is not fulfilled as promptly as expected, they will change strategy as their needs may be more significant than initially perceived, potentially moving from self-prescription, to MY Music, to a No Music Moment.

When unwell, participants in Survey 2 were more likely to report that their music listening has changed in time. Again, looking at how the interview participants described their music listening when unwell, they highlighted the importance of trial and error and adapting their strategies if certain music doesn't work, processes that require a change in approach. It could also be said, furthermore, that change in music listening may be more noteworthy and memorable for those listeners that face health challenges, as their listening is more likely to change more frequently, in comparison to listeners that potentially sit steadily at the average point of the continuum.

While the benefits of music listening were widely recognised in Survey 2, music listening is not *always* helpful, especially when listeners are unwell, as shown both in Survey 2 and the interviews. Risk and the likelihood of negative side-effects were heightened when listeners were unwell, tied to lower measures on the Virtuous Cycle, negative life events, health difficulties, and low wellbeing, while there seemed to be less risk at times when listeners were well and confident. This is also reflected in the listeners' strategies used during these times; when well, the listeners were more open to listening to any music, but when unwell MY Music and self-prescription are used to manage risk. The heightened negative side-effects and risk when unwell may explain why listeners may decide to take a break from listening through a No Music moment, recognising the potential negative impact. This is highly important when considering the widespread encouragement to engage in creative activities, including music listening, during the current COVID-19 pandemic and lockdown; for example, Neil Cox, the Edinburgh College of Art Director of Postgraduate Research advised "Listening to music, reading for pleasure, (...) all count in keeping your research on track!" in his email on the 2nd of April 2020. While listening to music may be an outlet for distraction and self-expression at these times, listening to music during times of heightened emotions, feelings of uncertainty, bereavement, and loss could be detrimental, especially when access to "traditional"support is limited. When unwell, the stakes are high, so listeners may have to take a step back from music.

8.2.2.2 Music listening at average times

When listeners are going through their average everyday life, facing difficulties that don't require significant effort and feeling moderately well, they are at the average point of the health and wellbeing continuum. During these average times, they choose

to listen to two different bodies of music. If they have any particular low-level needs they will choose self-prescription, using precise music listening to address a specific need, for example to support concentration while working. If the listener doesn't need any particular support, they will listen to preferred music more broadly.

According to Survey 2, averagely healthy and well listeners use music mainly to reduce negative affect, to regulate their mood and energy, to accompany other activities, and as distraction. At these moments, listeners are averagely well and any existing needs are low-level. The negative affect that they seek to alleviate is minor, and mood and energy regulation are also low-level needs. As the listeners are well enough to be engaging in a range of activities, self-chosen music is used to accompany these. Indeed, such low-level needs are satisfied through self-prescription tailored to the listeners' specific purposes. At these times, control and preference are still important, but listeners are more open to choosing from a wider body of preferred music.

At these average times, there are further differences in music listening for wellbeing. The Survey 2 data suggests that music is more important to listeners when they are averagely well than when they are unhealthy and less well, though still not as important as when they are well. This may be the case, as during average times listeners may still be facing some difficulties and endeavour to satisfy low-level needs, therefore may also have limited head-space to devote to music listening and it may be less of a priority. Music listening frequency and duration, furthermore, seems to be similar to when listeners are unwell, suggesting that at average times listeners have particular aims in mind, addressed through precise self-prescription strategies which may not require more frequent or longer music listening.

At average times, furthermore, listeners were likely to say that listening has helped them through difficult times. Their listening may have changed, but they reported less change compared to when unwell. If at these times listeners only aim to satisfy low-level needs, self-prescription may be more likely successful than not, therefore, not requiring a change in strategy. Music listening was also seen as a mainly positive influence, rather than negative. Being averagely well, listeners may be more likely to focus on the positive impact music listening has had, with side-effects being less probable, or seen as minor nuisances, as Rose highlighted, potentially using self-prescription to alleviate any minor negative impact, without going as far as to need MY Music. Due to this, during average times, change in music listening may be needed less frequently.

Overall, music listening was helpful at average wellbeing points. Negative side-effects are less likely at these times, but music listening can still be precise and targeted when addressing low-level needs. This is reflected in the listeners' strategies used during these times; to satisfy particular low-level needs they use self-prescription, and when music listening is used for a less specific reason, listeners choose from a wider body of

preferred music.

8.2.2.3 Music listening at healthy times

At times when listeners are very well, healthy, and are not experiencing any difficulties in their lives, or at least as few as possible, they sit at the right side of the health and wellbeing continuum. During these healthy and well times, listeners choose music in two ways; they might listen to any preferred music, and when their wellbeing is at the highest level, they may listen to any music at all, as there is very low likelihood of any negative side-effects or risk linked to non-preferred music and lack of control at these times. This use of music listening when very well was described by the interview participants and is further supported by the Survey 2 data.

According to Survey 2, participants who are very healthy and well and have no difficulties listen to music to enhance existing positive aspects, to express-themselves, to engage with music, through dancing for example, or even for no reason at all. Music listening is mainly used to reinforce positives, and not alleviate negative affect, unlike during unhealthy and less well times. Healthy and well participants still use self-chosen music, but also listen socially and in public, exercising lower control over the choice of music, with music listening being less targeted, accompanying a wide range of activities.

At these very healthy and well times, there are further differences in music listening for wellbeing. When experiencing very high health and wellbeing, the participants reported higher scores on the Virtuous Cycle, as discussed in Section 5.3, believing strongly in the positive impact of music listening, and music being very important in their lives, more than at average or unwell times. This may be due to listeners feeling very well and not facing any challenges, so music can be prioritised. When very well, music listening is most frequent and extended, as listeners may feel more open to listening for longer and they don't have specific expectations for fulfilling particular needs.

When very well, furthermore, participants reported change in their music listening, but less in comparison to unwell times, similar to average moments. This may, again, be due to music mainly having positive outcomes, therefore not requiring a change in strategy. Music listening was, indeed, seen as a strong positive wellbeing influence at these moments, frequently helping the listeners to cope with difficult times and not holding much risk, as also shown through the Virtuous Cycle. This is further supported by the interview participants, who suggested that negative side-effects are less likely when they are very well. Once more, this is reflected in the chosen music listening strategies; very healthy and well listeners may choose to listen to preferred music or any other music, showing confidence in the positive effect of music, and with control over music choice being of less importance. Indeed, it is at these times that participants choose to listen to music socially, with less control, and to a larger pool of music.

Overall, for listeners who are most well and healthy, music is mainly helpful and holds nearly no risk at all, consequently, their preference is wider and control over the listening experience holds less importance.

8.2.3 The four superordinate themes and the Adaptive Music Listening And Wellbeing model

The Adaptive Music Listening and Wellbeing (AMLAW) model brings together the quantitative and qualitative findings of this research, and, thus, also reflects the four superordinate themes presented in Chapter 6. The AMLAW model sees both music listening and health and wellbeing as highly individual and contextual. The model itself is based on the adaptability of music listening, and demonstrates and is built upon the sophistication of the listeners' practices and understanding.

8.2.3.1 Individuality

The AMLAW model is centred around the health and wellbeing continuum, which represents each listener's perception of their health and wellbeing; their personal and unique highest and lowest points, and the gradual movement between them. There are no set boundaries between "steps", as each listener's tolerance and needs will differ, and there is no specific pain level, for example, that is attached to No Music Moments on the left side of the continuum. As such, what may constitute a minor setback for one listener could be detrimental for another, highlighting that the AMLAW model cannot be used for comparison between listeners, rather represents the relationship between each individual listener's music listening and health and wellbeing. This becomes very important looking at listeners who may have chronic illnesses, for example, or when noting that some participants reported more or longer No Music Moments than others. At what point each listener feels healthy and well, unhealthy and less well, or average, or when each listener may move from one of these states to another, is not pre-defined, and may indeed change, based on the listeners' experiences in life, their age, or other factors.

Individuality is also highly important regarding the music that is chosen; the bodies of music used remain the same, however, their content will differ widely between individuals, as highlighted in Chapter 7. Any music can be part of MY Music, or used for self-prescription, for example, if the listener decides so, and it is different music that is safe, or can carry risk, for different listeners. It is this classification of music by the listener that shapes the content of these music categories, and not the music itself. Therefore, while the model remains the same, music that for one listener may be situated on the far-left side of the continuum, for another it may be on the far-right side.

The individuality of the AMLAW model further highlights that the relationship between music listening and health and wellbeing, is precise but relative, part of a reflective relationship and within the context of the listeners' lives. This model offers insight into music listening at different points of wellness. It is applicable widely, yet also individually, as it recognises that practices and music choices differ between listeners, thus is not meant to draw comparisons between listeners, rather, between different times for each listener.

8.2.3.2 Contextuality

Context is important in the AMLAW model in two ways. The listeners' contexts inform their assessment of their wellbeing and the strategies that they use. They continuously evaluate their wellbeing based on their past experiences and in the context of how they usually feel, based not only on their individual experiences but the context of their lives as well. This means that, for example, a listener who experiences intense chronic pain may report higher wellbeing when the pain decreases somewhat, while for another listener that level of pain may have been insufferable. We could, therefore, expect to see this difference reflected in their music listening, with the first listener choosing music that sits on the right side of the AMLAW, for example any preferred music, or even exploring new music, whereas the second listener may have turned to their MY Music for support or even need to take a break from music listening until the pain subsides.

Secondly, context is also linked to the potential effectiveness of the chosen listening strategies, and therefore the listener's movement along the model. As discussed in Chapter 7, the music listening context, such as a public setting with lack of control, or a listener's existing low mood, may lead to negative listening outcomes, with the listener then turning to their MY Music or choosing a No Music Moment. On the other hand, context can have a positive impact as well, with a supportive social context, for example enhancing the listener's perceived wellbeing. When this is the case, the listener may move towards the right side of the AMLAW model.

The importance of context in this model highlights once more that it should not be seen comparatively, but within the context of each listener's life alone, discouraging blanket interpretations and recommendations.

8.2.3.3 Adaptability

Adaptability plays an important and threefold role in the AMLAW model. Firstly, the AMLAW model highlights the adaptability of music listening for wellbeing. As discussed in Chapter 7, it is due to music's ability to address and adapt to a wide range of needs, that it plays this important role in relation to health and wellbeing. Music listening is an adaptable tool that can be appropriate at almost all times, with different

strategies and music chosen depending on our momentary needs. On the other hand, the AMLAW model also recognises the limitation in the adaptability of music listening for wellbeing, reflected in the presence of No Music Moments on the far-left side of the health and wellbeing continuum.

Secondly, the model is a display of the adaptability of the music itself. Looking at the music that is listened to, any music can be used for wellbeing purposes, depending on the listener's existing wellbeing, their preferences, and the music listening context. It is also recognised, furthermore, that the associations and effects of particular music may change at any time, with this potentially leading to variability in response and increased risk, and to the change in the role of the particular music.

Finally, the AMLAW model highlights the adaptability of music listening strategies and the range of purposes behind listening. We listen to music for wellbeing purposes differently depending on where we are on the health and wellbeing continuum; our aims are different, where and how we listen to music is different, and we require different degrees of control over the music listening. The bodies of music we listen to also differ, and we are typically more tolerant of music we might not choose nor like when we are well.

The different strategies represented in the AMLAW model, the rationale behind them, and the various choices made, all aim to enhance, or at least maintain, the listener's wellbeing. There is no music that is inherently not suitable for wellbeing purposes. Similarly, there is no particular way of listening to music that is harmful or helpful on its own, rather this depends on whether it is suitable for the particular listener at the time. This model highlights the importance of adaptability, and the change in music listening as our health and wellbeing changes. As a result, music listening for wellbeing must be approached as evolving and adapting alongside the listener's needs and preferences, the listening itself, taking many different forms.

8.2.3.4 Sophistication

Sophistication is at the heart of the AMLAW model, both the sophistication of music listening for wellbeing strategies, as well as the listeners' sophisticated understanding of these. Firstly, the model highlights the precise and sophisticated strategies used by listeners through the integration of the current quantitative and qualitative findings. The quantitative data suggested a link between particular music listening behaviours, aims, and contexts, and higher or lower wellbeing, as seen in the music listening profiles presented in Chapter 5. The qualitative data took these further, adding context and individual experiences, and linking these trends to specific bodies of music. The relationship between music listening and health and wellbeing is as complex as these strategies, and it is not simply a case of "more music listening makes you healthier".

Secondly, and most evidently, the model is a result of the listeners' high-level and in-depth understanding of the relationship between their music listening and health and wellbeing. The listeners presented a rationale behind their decision-making that takes into account potential variability and negative side-effects, and their existing condition and wellbeing needs, showing that wellbeing purposes can only be fulfilled effectively through informed and appropriate executive choices made by the listeners, based on their preferences, past experiences, and current needs. The listeners' developed sophistication, in other words, is what makes their music listening for wellbeing effective.

The AMLAW model highlights the listeners' high-level knowledge, which is used on an everyday basis in music listening for wellbeing. As expert self-medicators, they know what they need to listen to and how, depending on how well or unwell they feel, choosing between these strategies and making subsequent informed choices based on the music listening outcomes. This suggests caution in developing music listening for wellbeing tools and interventions without close consultation with the listeners themselves and argues against taking an approach that simplifies the importance of personal preferences, contexts, and expertise.

8.3 Summary

This chapter introduced and discussed the Adaptive Music Listening and Wellbeing (AMLAW) model, which brings together the main quantitative and qualitative findings discussed in Chapter 5 and Chapter 7. Music listening behaviours and choices at healthy and well, average, and unhealthy and less well times were discussed, and the role of individuality, contextuality, adaptability, and sophistication was also highlighted.

The AMLAW model proposes that music listening choices are inextricably linked to the listeners' health and wellbeing, taking different forms; it is not simply "listening" or "not listening", rather "what kind of listening". For instance, at unhealthy and less well times or around negative life events when listeners are facing significant difficulties, they require the most control over their listening. They use self-prescription to fulfil particular needs, and when they require more support, they might turn to their MY Music, a safe and reliable wellbeing tool. At extremely difficult times listeners may take a break from music through a No Music Moment. When unwell, listeners seek to reduce negative affect and support in coping with difficulties, and they listen to purposefully selected music in isolation or alongside a few activities. Furthermore, when unwell there is higher chance of variability and risk, and listeners are more likely to change their listening practices, possibly as a reaction to the listening not fulfilling their expectations. On the other hand, when listeners are experiencing high health and wellbeing, and as few difficulties as possible, they require the least control over

their listening and tend to also listen to music in social and public contexts. They choose from their preferred music or could even listen to music that they may not like, without risking negative side-effects due to their existing high wellbeing. When well, their reasons for listening are different as well, as it is mainly to reinforce positives, sometimes listening for no reason at all.

The AMLAW model further reflects the individuality, contextuality, adaptability, and sophistication of music listening for wellbeing, initially discussed in Chapter 7. The way the model is displayed in one's listening is highly individual and contextual, with health and wellbeing assessed both based on the individual's needs and "tolerance", as well as within the context of their overall health and wellbeing, and past experiences. The music used is also individual and contextual, as choice is based on preference, the music's associations, and the listener's unique categorisation of music. Any music listening, and indeed any music, can be used for wellbeing purposes, depending on the listener and their needs at the time. The model further highlights change and sophistication in music listening for wellbeing. This explicit presentation of different music used at different wellbeing times or around important life events makes it absolutely clear that music is chosen based on the listener's preferences and relationship with particular music, rather than intramusical characteristics alone. Furthermore, the model highlights the level of change and adaptation in music listening behaviours. There is no doubt that music listening changes over the listener's lifespan, highlighted in the learning journeys discussed in Chapter 7. However, it also changes alongside the listeners health and wellbeing and around events that influence their lives. This process, therefore, should be taken into consideration in music listening research, as music listening choices, use, and impact, I suggest, are more fluid and dialogic than how they are often addressed, both in relevant research and by the music industry.

Looking at the AMLAW model alongside the quantitative and qualitative data presented and discussed in previous sections, an in-depth understanding of music listening for wellbeing is presented. This model provides detailed insight into what music listening for wellbeing may look like at different wellbeing times for each individual listener, with listeners employing these strategies at different points during their lifetime. The particular use of different bodies of music at different wellbeing points further highlights the importance of the listener's relationships and associations with the specific music, knowledge that can only be obtained through consulting the listener's expertise. The AMLAW model highlights that the relationship between music listening and health and wellbeing is precise, yet relative. As a result, this model is not meant as a means of comparison between listeners, rather as a reflection of listening at different times for the same individual. It is a tool to help interpretation of music listening behaviours, rather than to encourage blanket recommendations, and, above all, it supports the essential role of the listeners' expertise in music listening for wellbeing. Furthermore,

the AMLAW model evidences that there can be no static approach towards listeners nor music listening for wellbeing. Music listening for wellbeing changes between times and listeners; there is no one-size-fits-all model.

Chapter 9

Conclusion

9.1 Overview

The topic of music listening and health and wellbeing has attracted much interest in the field of Music Psychology. However, much of the literature is quite specialised, focusing on specific psychological aspects such as emotion regulation strategies, or on particular sub-populations, often to do with certain health difficulties. The literature review in Chapter 2 explored the relationship between music listening and health and wellbeing through discussing its functions and effects on a range of health and wellbeing aspects. It showed, however, a considerable heterogeneity in methodological, analytical, and conceptual approaches across studies. Furthermore, important remaining questions were highlighted in order to understand the role of music listening in everyday life in relation to health and wellbeing. When focusing on the international general population it is an ongoing challenge to synthesise discrete theories focusing on different aspects and effects of music listening, and to generalise from music listening outcomes that take place in the laboratory. This research combined quantitative and qualitative methodologies to achieve a greater understanding of music listening and health and wellbeing in listeners' everyday lives.

This thesis addressed music listening and health and wellbeing in the international general population with a highly broad scope. Using mixed-methods, overall statistical trends were discovered, which were then enriched and explained through personal narratives, providing a more holistic understanding of music listening for wellbeing in the listeners' lives. This research significantly contributed to the knowledge base of this subject area, as it reaffirmed the relationship between music listening and health and wellbeing, shedding further light on the nature of this relationship. The findings described certain music listening for wellbeing tools in detail, while also exploring the potential negative side-effects of music listening. The broad scope of this research al-

lowed to explore the topic widely, approaching music listening for wellbeing at both a macro and micro level, to discover how it is used across the span of health and wellbeing, while focusing on important characteristics and features. Overall, these findings supported the role of music listening as a salutary resource, as well as cautioned against potential side-effects. As a result, these findings have important implications for everyday music listening, the music listening industry, and healthcare within, of course, the context of relevant limitations, both discussed in detail in this chapter.

In terms of methodology, this research confirmed the value of mixed-method designs to investigate music listening and health and wellbeing, especially appropriate given the complexity of the topic and the multitude of interconnected factors and effects. Survey 1 investigated music listening and health and wellbeing in the context of other leisure activities. Survey 2 focused on specific music listening behaviours and health and wellbeing aspects, and the relationship between them, as well as collecting qualitative data. Finally, the interviews provided rich narratives on music listening for wellbeing and introduced new important factors, looking at how the participants use music listening in their everyday lives, and the positive and negative effects. Through the combination of survey and interview data, this research showed that overarching trends can explain certain statistical associations, yet music listening for wellbeing is best understood and explained by the listeners themselves.

Furthermore, this research greatly supported the use of crowdsourcing, used in all three studies, for the investigation of such broad questions, and potentially within a more limited scope. Crowdsourcing, in my knowledge, has not been utilised widely in Music Psychology research, yet it was this innovative method that allowed this research to successfully address its research questions in the intended population, providing three independent and highly diverse international samples. While the cross-cultural dimension was not found to be significant in regards of differences based on nationality, the use of crowdsourcing in such studies would be highly appropriate.

The purpose of this chapter is to highlight the main outcomes of this research, drawing together the overall quantitative and qualitative findings presented in previous chapters. It includes a synopsis of the thesis contents, followed by a discussion of the main findings in terms of key contributions to the field. The limitations of this research are then presented, followed by a discussion of implications for everyday music listening, the music listening industry, and the healthcare sector. Finally, directions for future research are presented, drawing the thesis to a close with a final conclusion section.

9.2 Synopsis

Chapter 1 situated this research in the context of today's world and described its relevance. In detailing my motivation to investigate this topic, I explained the observations and concerns informing my rationale behind this research. This chapter closed by presenting an overview of the thesis chapter structure, providing a sense of direction.

Chapter 2 had three aims: to provide the theoretical context of this research; to situate this research in the context of current relevant literature, focusing mainly on relevant systematic reviews; and to highlight the gaps and discrepancies in existing research, which led to the current investigation. This section introduced how the concepts of music listening and health and wellbeing are understood and approached in this research, outlining theories related to these concepts. Music listening was seen as an active way to engage with music and a personal resource, and health and wellbeing were approached as a constant movement towards health, affected by multiple internal and external factors and influenced by the individual. The role of music listening in everyday life was then explored through focusing on music listening functions in general, and specifically for health and wellbeing. This discussion established the positive impact of music on various health and wellbeing aspects, while highlighting important remaining questions, such as on the role of influencing factors, contexts, and individual differences. As this research focused equally on positive and negative effects, an extensive discussion of potential negative music listening side-effects followed, highlighting, once more, the importance of internal and external factors and uncovering further areas for investigation. Finally, this chapter closed by outlining the scope of this research and introducing the research design, including the two overarching research questions, the secondary research questions, and sub-questions.

Chapter 3 discussed all methodological decisions and concerns. It introduced the philosophical background to the selected methodology, and explained the rationale behind adopting this mixed-methods design. It provided evidence for the robustness of the methods used for both the data collection and data analysis, outlining all ethical considerations. Furthermore, it discussed the specific tools used, namely online survey research, crowdsourcing, and online interviews.

Chapter 4 presented the main findings from Surveys 1 and 2. Their methodology was outlined in terms of the design, data collection, and data analysis processes, as well as describing their population sample. Their main findings were presented, focusing on descriptive statistics and statistical associations. Survey 1 found that music listening is highly prevalent in a very diverse, large international sample. Music listening was largely uninfluenced by demographic characteristics, and music listening frequency and duration were associated with higher life satisfaction. These findings confirmed the

important role of music listening for health and wellbeing and highlighted the further importance of other factors, which were investigated in Survey 2. Survey 2 was an in-depth exploration of music listening behaviours and health and wellbeing in a smaller, though still highly diverse, international sample. It found that specific music listening behaviours are linked to health and wellbeing, such as certain reasons for listening to music. These statistical associations led to the listener profiles discussed in Chapter 5. Furthermore, music listening was found to change during the lifespan, while the negative effects of music listening were also highlighted, with participants stating that music can be unhelpful or, indeed, even dangerous. Finally, Survey 2 unearthed the listeners' prescription-like practice when discussing music listening for wellbeing, referring to specific aspects of music listening regarding suitability, including what should be listened to ("the medicine"), for what ("the ailment"), how ("the conditions" or "dosage"), what it will help with ("the cure"), and the potential risks ("side-effects").

Chapter 5 further discussed the Survey 1 and 2 findings. The most statistically prevalent music listening behaviours were listed, such as reasons for listening, listening frequency, and duration, describing how most listeners listen to music; the fictional average listener. The section continued by looking at music listening behaviours that were statistically associated with higher or lower reported health and wellbeing, presented in the healthy and unhealthy listener profiles. It also introduced the Virtuous Cycle concept, a significant factor in the relationship between music listening and health and wellbeing, based on the link between the belief that music listening is a positive influence, the effective use of music listening for coping in the past, and the importance of music in life. Finally, the mediated nature of the relationship between music listening and health and wellbeing was discussed.

Chapter 6 outlined the interview design, data collection, and data analysis processes, as well as describing the interview participants, and the main findings were presented. The participants' accounts of their music listening for wellbeing highlighted eight subordinate themes: i) dynamic music listening, a range of dynamic and active processes and behaviours as part of music listening, ii) variability in response, how the same music can have a different effect even on the same listener, iii) side-effects and risk, the potential negative effects of music listening and the listeners' safeguarding strategies, iv) a precision tool, the precise self-prescription of specific music to fulfil the listener's needs, and the choice to take a break from music listening through a No Music Moment, v) learning journeys, how listeners learn how to use music listening and become aware of its affordances, vi) fingerprints, how music listening for wellbeing is perceived as unique and part of one's identity, vii) beyond music, how music listening for wellbeing is inextricably connected to aspects of the listeners' lives beyond music, and viii) MY Music, a body of music that is a safe and reliable wellbeing resource at the most difficult times. Furthermore, four superordinate themes highlighted the i) individuality, ii)

contextuality, iii) adaptability, and iv) sophistication of music listening for wellbeing. Music listening and its effects on wellbeing are highly personalised and look very different for each listener and in different contexts. Music listening, furthermore, was found to be helpful in a great breadth of everyday life situations, adapting accordingly. Finally, listeners have a high-level awareness and sophisticated understanding of what music listening will be helpful, when, where, and how, and have developed strategies accordingly, demonstrating that they themselves are their best self-medicators.

Chapter 7 discussed what music listening for wellbeing looks like according to the superordinate themes and focused on the key points from the interview findings: i) music listening is not just listening, ii) the effects of music can change even for the same listener, iii) listening to music can be harmful, iv) music listening for wellbeing is a precise tool, v) music listening changes and listeners learn how to use it for wellbeing vi) MY Music is an essential wellbeing resource.

Chapter 8 brought together the findings and discussion from all three studies, introducing the Adaptive Music Listening And Wellbeing (AMLAW) model. It integrated quantitative and qualitative findings, contributing towards a holistic understanding of music listening and health and wellbeing in everyday life, according to which listeners engage with music listening differently depending on their existing health and wellbeing. The AMLAW model placed a range of music listening behaviours on the health and wellbeing continuum and highlighted the link between choosing specific bodies of music at different wellbeing times. Finally, the AMLAW model was also discussed in terms of the four superordinate themes.

Finally, Chapter 9 draws the thesis to a close, providing an overview of this research and pulling together its main findings. Revisiting the research questions explored, this chapter outlines the research's contribution to the field of music listening and health and wellbeing, and discusses the limitations of this research design and future research directions. The implications and recommendations stemming from this research are also presented, highlighting the meaning of these findings for listeners, the healthcare sector, and the music listening industry.

9.3 Contribution to the field

Having summarised the outline of the thesis, I now revisit the research questions presented initially in Chapter 2, drawing together the main findings from all three studies.

This research investigated the relationship between music listening and health and wellbeing in the everyday lives of the general population. The three studies comprising this research focused on exploring two overarching questions:

1. For which listeners, when, how, and why does music listening enhance health and wellbeing within the international general population?
2. For whom, when, how, and why is music listening seen as unhelpful by listeners in the international general population?

Resulting from three studies with wide scope and integrating quantitative and qualitative data the findings address the above overarching questions through answering key questions, pulling together the findings to focus on specific areas. The current findings address the following key questions:

- What does music listening in everyday life look like?
- What is the relationship between music listening and health and wellbeing?
- What does music listening for wellbeing look like?
- Does music listening have negative effects on wellbeing?

9.3.1 What does music listening in everyday life look like?

Music listening is a highly prevalent and important activity which seems to have a different, and perhaps closer, relationship with wellbeing compared to certain other leisure activities. Listeners use music listening differently, in fact we could say that no two listeners use music the same! However, demographic characteristics may not play such an important role after all, rather listening practices may be more influenced by the listeners' learning journeys, for example. Music listening in everyday life is influenced by the individual listener, and the listening context as well, including their existing health and wellbeing. The participants showed that they use music listening adaptably throughout their life, developing sophisticated strategies and a high-level understanding of their impact. Furthermore, despite the access to nearly infinite pieces of music, listeners still choose specific music that works for them.

9.3.2 What is the relationship between music listening and health and wellbeing?

Music listening has an important relationship with health and wellbeing, and can be an essential salutary resource for listeners, independently of demographics and health difficulties. This relationship is reflected in the association of particular ways of listening with feeling more or less well, as presented in the AMLAW model in Chapter 8, for example. In self-prescribing music listening, listeners consider multiple factors to produce an individual, in-context, prescription of the music listening that will address their current needs, drawing on their expertise and taking advantage of music's adaptability.

While the relationship between music listening and health and wellbeing is supported in the current findings, however, it is not simply based on using particular music for a particular duration to enhance one's wellbeing. The effectiveness of music listening for wellbeing depends on the appropriateness of the strategies used and building on the listeners expertise, as the impact of certain music can change, and music listening can have negative side-effects.

9.3.3 What does music listening for wellbeing look like in everyday life?

The Adaptive Music Listening And Wellbeing model

Music listening for wellbeing is intentional and precise, however, takes different forms in everyday life; it is different between listeners, as well as between different times in the listener's life depending on their health and wellbeing at that moment, or important life events, as shown in the AMLAW model in Chapter 8. For example, when feeling very well and healthy, listeners may engage in more "risky" music listening, exploring music they don't know, or even listening to something the dislike, including in social and public settings, and they may have lower control without a diminished likelihood of negative side-effects. When feeling unwell and dealing with significant health difficulties, however, listeners may choose to listen to their MY Music, which is a reliable and essential wellbeing resource, as the likelihood of negative side-effects is high. When listeners are facing the most difficult challenges, they may choose to stop listening to music through a No Music Moment. This model provides insight into how music listening for wellbeing is used in everyday life, and further highlights how listeners' strategies depend on their preferences and relationship with the music, rather than stereotypical genre associations or intramusical characteristics alone. Music listening for wellbeing in everyday life, therefore, is fluid and adaptable, and cannot be approached through blanket recommendations across listeners and times, rather it relies on the listener's expertise.

Self-prescription and No Music Moments

Self-prescription is the most common music listening for wellbeing tool, where music is administered precisely, to fulfil specific health and wellbeing needs. Self-prescription also differs between listeners and contexts, and relies on the listener's expertise, with each listener potentially choosing very different music to satisfy similar needs.

No Music Moments are another aspect of self-prescription, when listeners choose to take a break from music to avoid negative side-effects, usually during difficult times. These can vary in length, depending on the listener and the reason behind this.

MY Music

MY Music is possibly the most important music listening for wellbeing resource. It is a defined body of music, developed by each listener throughout their life, and used adaptably over time. Its role is highly significant during difficult times, but can be used any time, as it is a reliable and safe resource that – nearly – always helps; the listeners' last resort. MY Music is unique, linked to the listener's lives and identities, and while it is used by every listener it is highly individual and can, indeed, be any music at all!

What is important in music listening for wellbeing

Music listening for wellbeing is a precise tool, however it is also highly individual, contextual, adaptable, and sophisticated. There are further aspects that are important when exploring music listening for wellbeing:

i) It is shown to be a multimodal and dynamic activity which includes a range of active processes beyond listening that have an important role in the listening experience.

ii) Music listening outcomes are not static and their impact can change even for the same listener. Therefore, there is no guarantee that music which has helped in the past will always help, and side-effects can be unexpected. Furthermore, the effects of music don't necessarily depend on intramusical characteristics, rather it depends on the listener's existing health and wellbeing and the appropriateness of the chosen strategies.

iii) Music listening for wellbeing changes and is learned by the listeners, who develop their strategies and expertise within the context of their lives.

The Virtuous Cycle

The Virtuous Cycle is important in music listening for wellbeing; the high level of i) importance of music in one's life, ii) belief that music listening has a positive effect, and iii) successful use of music listening to cope with difficulties in the past, seems to be linked to music having positive effects, independently of demographics and health challenges. Many interview participants, for example, discussed the importance of music for them and how they have used it to cope in the past, presenting high measures in the Virtuous Cycle. In this case, their use of music supported them in enhancing their wellbeing and moving towards the right on the AMLAW model, despite their serious chronic health conditions. The Virtuous Cycle, thus, suggests that it is not only the listener's existing health and wellbeing that influences the listening outcomes, but also the listener's belief in their effects, for example. Therefore listening outcomes may be influenced by how the listener is managing pain, and whether it is allowing them the head-space to believe that music will help, rather than what level of pain

there is. The Virtuous Cycle explains how significantly ill listeners reported finding music very helpful, as it increased their wellbeing within their personal health and wellbeing context, and how music listening can be helpful or unhelpful in equivalent situations, as listeners' Virtuous Cycles will differ.

9.3.4 Does music listening have negative effects on wellbeing?

Listening to music can indeed have negative side-effects. Whether resulting from a change in impact, namely variability in response, or arising as an expected negative effect, these side-effects can be minimal or detrimental. Any music listening can be helpful or unhelpful in any kind of situation and for all needs, but this depends on each listener and their chosen strategies. For instance, the choice of music is important, however this is based on the specific listener's preferences and relationship with that music in that moment, and not the music genre per se. This means that music listening for wellbeing must be treated with caution and not seen as a panacea, calling for music listening for wellbeing interventions to draw on the listeners' expertise.

9.3.5 Summary

This section has outlined the contributions of this thesis and how it adds to the existing literature in music listening and health and wellbeing. It has addressed what music listening looks like in the everyday life for the general population and discussed the relationship between music listening for wellbeing. Specific music listening for wellbeing tools were then proposed, highlighting how these tools and specific bodies of music may be used in everyday life depending on the listener's health and wellbeing, based on the proposed AMLAW model, and important aspects of music listening for wellbeing were summarised, including negative side-effects. The current findings overall highlight the individuality and contextuality of music listening for wellbeing and suggest that listeners know how to use music listening for wellbeing and have developed high-level expertise and adaptable and sophisticated tools. The next sections discuss the limitations of this research, directions for further research, and the implications of the findings presented in this thesis.

9.4 Limitations

As in any research, there were a number of limitations to this investigation. Regarding methodology, while it aimed to surpass methodological dualism and collect rich data through a mixed-methods approach, this led to other limitations. Conducting both quantitative and qualitative research imposed a strict time-line and limitations on the

participant numbers. It could be argued that conducting a quantitative or qualitative study alone would have allowed for a more in-depth exploration of either statistical associations or lived experiences, resulting in potentially more focused and detailed findings. However, this was planned from the beginning as a broad exploration and a challenging endeavour. The aim was to find broader trends and explore listeners' experience of music listening for wellbeing in their everyday lives, and not to look at one area exhaustively, which would have been rather impossible.

While this research cannot be considered as exploratory, due to the vast amount of relevant literature, its scope was wide, aiming to gain a holistic understanding of music listening for wellbeing in the general population. This meant that the overarching research questions remained broad, and its aims were both to measure given variables and equally to discover new influencing factors, as indeed was the case. Given the strict time-frame, the wide scope of this research could be viewed as attenable, and therefore had to be approached pragmatically, and narrowed down in other ways. For this reason, this research addressed music listening in everyday life, mainly self-administered, and did not touch on other forms of music engagement, nor music therapy and other fields. Furthermore, it explored the subjective perception of health and wellbeing through different aspects, but without using physiological measurements, for example, nor was music listening assessed by professionals, therapists, or medics as helpful or unhelpful. All findings are based on the participants' observations and understanding, and the statistical analysis adopted an exploratory approach, rather than being hypothesis-driven. This wide scope also meant that the research investigated health and wellbeing in general, without focusing on specific health difficulties, despite the participants' wide range of mental and physical health challenges. Therefore, all findings regard health and wellbeing overall.

The PhD time-frame further limited the research design. The limitations in survey participant numbers and the high number of nationalities may have prohibited finding cross-cultural differences. Furthermore, it was not possible to go back to any of the participants for follow-up interviews, which undoubtedly would have provided more understanding of how music listening for wellbeing works in practice.

The specific methodological tools used entailed further limitations. Firstly, the use of crowdsourcing added a practical limitation regarding funding, as it relies on compensation of the participants. Furthermore, the use of self-report measurements in Surveys 1 and 2 was seen as appropriate for this research, but meant that the findings had to be further explored in the interviews for triangulation purposes. A further limitation, or rather, consideration, was the collection and interpretation of survey data. Survey data can be seen in two ways: i) as static images of participants, reflecting different categories of individuals and characterising them permanently, or ii) as reflecting

different time-points in listeners' lives, with listeners' behaviours and lives developing and progressing beyond that time-point data. This became a significant consideration when interpreting the Survey 2 data, especially in the context of the interview data. As either way of evaluating survey data has its own limitations and implications, both were followed in this thesis to produce different though complementary findings - the music listening profiles (static data) and the AMLAW model (time-point data).

In terms of the interviews, the nature of the process was retrospective and memory retrieval inaccuracy is possible, potentially influencing how the data should be interpreted. Nonetheless, the qualitative aspect of this research focused on the participants' reality as perceived in the moment, inevitably bound in their reflections. The interview data was of great value in the context of this research, as it brought to life the quantitative data, complemented, and explained it. The interview participants were more comfortable sharing positive views about music listening, having relied on it at difficult times, which was an expected challenge as also found by McFerran and Saarikallio (2014) and McFerran and Hense (2017). This highlighted the need to explicitly ask to explore negative music listening experiences, and the participants' willingness to speak freely, and often intimately, about challenging music listening experiences suggests that participant narratives were not impeded. In terms of generalisability, the interview findings were based on a sample of 20 participants, potentially restricting applicability, however their integration with the quantitative findings adds to the significance of these findings, which could potentially apply to a wider field.

Finally, despite the great diversity of the three samples, they were all recruited through crowdsourcing and contributed to this research online. This, therefore, could suggest that they belong to a specific sub-population: those who have access to the internet, and are also subscribed to crowdsourcing platforms, or use subscribing websites, likely working class or lower class, and many spending extended amount of time at home due to difficulties or health challenges. All participants, moreover, were self-selected, though independent samples. This could suggest that they had strong or specific views on the topic of music listening and health and wellbeing. For this reason, Survey 1 was designed and distributed as a survey focusing on leisure. The fact that compensation was used as motivation and distribution took place through non-music-related websites may have improved the diversity in the sample and attracted participants who were not particularly interested in music listening. Nonetheless, despite their seeming diversity, the participants' views may not represent those of individuals who do not use the internet, for example, which has implications when considering generalisability. Further research is required to investigate the transferability of these findings and the AMLAW model in different populations, as well as for children and young people under 18 years old.

9.5 Future research

This thesis has brought to light several areas that could be taken forward. One direction would be to further investigate the findings and AMLAW model at a greater scale and in different ways. The music for wellbeing tools, self-prescription, and MY Music, as well as No Music Moments, could be studied further to gain greater understanding. In discussing these tools, this thesis focused on what they are, how they are used, and how they were described by the listeners. Intramusical characteristics were not explored, and the individuality of these tools was strongly highlighted. Nonetheless, it would be valuable to look at intramusical aspects next and find out what role they play for each listener when using these tools; not trying to link specific musical characteristics to specific functions, but rather looking at what characteristics listeners consider. This could be undertaken through an Experience Sampling study (ESM) looking at how and when they are used in practice in a naturalistic approach, as well as through interviews. Another possibility could be using a mobile device application, such as the *MUPsych* (Randall and Rickard, 2013), however this would restrict the data collection to listening that takes place on mobile devices, potentially excluding other music listening and certain participants. The links found between the use of specific bodies of music and listeners' health and wellbeing levels could be taken forward through an ESM study as well, obtaining further insight in the use of specific bodies of music based on health and wellbeing conditions. Future research, furthermore, could take the AMLAW model back to listeners through interviews or focus groups, collecting feedback on whether or not it reflects what they do in their everyday lives, and to understand its usability and limitations for individual listeners.

Another element that could be further explored is the proposed Virtuous Cycle construct and its role in the mediated relationship between music listening and health and wellbeing. This factor was discovered through Survey 2 and explored in the interviews. However, the scope of this research did not allow for in-depth exploration to fully understand how it develops. It is not associated with demographic characteristics and there is no clear entry point for listeners, and for now remains rather elusive. Further research could examine the role of this construct and focus on its three components: importance of music, belief in the positive effects of music listening, and successful use of music listening for coping. Since this seems to be such an important factor in the relationship between music listening and health and wellbeing, it would also be useful to investigate why and how some listeners report this higher than others.

The subordinate and superordinate interview themes revealed important aspects for music listening for wellbeing. Given the scope and time constraints of this research, further in-depth exploration of these themes was not possible, and some features could certainly be seen as independent research topics; for example, learning journeys, ad-

dressing the change and learning in one's music listening, calls for further exploration and there is little literature looking at music listening for wellbeing continuously across the lifespan. A longitudinal study would be ideal for this.

Finally, regarding methodology, it would be interesting to further investigate the affordances of crowdsourcing for Music Psychology research, the differences between crowdsourcing platforms, and for what research each may be most appropriate. Crowdsourcing is an innovative and very promising way of approaching data collection, and could be used extensively in Music Psychology, especially when focusing on health and wellbeing, and such prevalent activities as music listening.

9.6 Implications

The research findings presented in this thesis carry practical implications for everyday music listening, the everyday music listening industry, as well as the healthcare sector.

Everyday music listening

Everyday music listening is highly prevalent in nearly every environment; in this context these findings have significant implications. For example, a growing body of research suggests that music listening can be helpful at the workplace, with many encouraging the use of office playlists (see Haake, 2011). The current research, however, cautions against such imposed listening. Listening to music can indeed have positive effects, but its outcomes depend on many factors, including how the listener is feeling at the time. While they may enjoy the particular music one day, it could be detrimental the next. There is no playlist, furthermore, that will be appropriate and helpful for all employees nor at all times, and while boosting productivity and mood for some, the negative effects this can have on other employees, as suggested in this research, should not be ignored. In fact, this has recently been the topic of discussion by *Starbucks* employees. While complaints are mainly based on the repetitive and monotonous nature of this imposed music listening, the online discourse is in agreement with the current findings. For example, the "Hamilton Takeover", a playlist that took over 8000 Starbucks locations in January 2019, was said to have made some employees "stabby" and to be deleterious to their mental health (Locker, 2019). The current findings suggest that it is not only the repetition of music that can have negative effects on workers, but also the lack of control throughout their workday. Employees have different personal music preferences and will be at different wellbeing points on different days, with this imposed music affecting them differently every day.

Music listening industry

Listening to music through online streaming is an important part of the music industry.

With total streaming revenues growing 34% in 2019 and comprising nearly half of all global music industry revenue, it is widely used and invested in by listeners (IFPI, 2019). This thesis, however, carries important implications for digital music listening, especially the use of playlists and auto play on mediums such as *YouTube* and *Spotify*, and the restrictions in free streaming services.

The use of pre-created playlists that are specifically made for concentration, relaxation, or to help fall asleep, for example, is widespread and such playlists are increasing by the day. While they can be helpful and listeners may be lucky enough to discover a song or artist they enjoy, the findings in this thesis call for caution. Auto play and music suggestions are often based on intramusical characteristics, such as the listener's genre preferences or what music is popular at the time, without taking into consideration what music the listener may *not* want to listen to. As seen in the AMLAW model, playlists with unknown or unpredictable music are more likely to be used when listeners are feeling well. However, if listeners misjudge this, or they are not fully aware of how they are feeling at that moment, there could be negative effects. Of course, this is not to say that playlists are dangerous or shouldn't be used. As it's been established, however, that certain music can have negative effects on individual listeners, then it would be appropriate for listeners to be able to exclude this music from any playlist they may listen to. For example, Annie, one of the interview participants, should be able to go onto the streaming mediums that she uses and declare that she does not want to listen to Eva Cassidy and Elvis Presley *ever*, so their music would never automatically play or be part of any playlist, thus protecting her from potential side-effects, or at least those she can predict. Looking at the *Spotify* app, for example, listeners have been asking for further features to increase their levels of control since 2015 (Hearon, 2017). Finally in 2019 *Spotify* rolled out a feature to mute artists that people don't want to listen to, and this indeed blocks this music even in playlists. However, this mute function isn't available on the desktop app or web version, only on mobile. Furthermore, when listening on one's phone through the free version of Spotify, the listener can only choose an artist or playlist, but cannot choose a particular piece, while being allowed a limited number of skips. These limitations are significant in the context of the current findings, and have even led to some developing new Spotify-like risk-free music exploration applications (Gandhi, 2018).

The current findings are also relevant when looking at the *Sync Project*, who are collecting biophysiological data alongside music listening data, in an endeavour to develop clinical applications of music listening to address a range of everyday aims and health difficulties. Their aim is to personalise music according to peoples' preferences, towards standardised musical prescriptions, similar to saying "take two of these songs and call me in the morning" (Killelea, 2017). While this seems like an exaggeration, it reflects a certain approach towards music listening that sees outcomes as directly tied to specific

music, allowing music to be administered like medicine. For instance, the *Sync Project* released *Unwind.ai* in 2017, an application of algorithmically generated music to relax users before sleeping. The current findings, however, treat this approach with caution. Any music listening prescription, if not self-prescription, must be negotiated with the listeners themselves to avoid risk and support wellbeing enhancement. Furthermore, biophysiology, while valuable, does not necessarily provide a holistic understanding of the listening experience and effects. Moreover, will algorithmically generated music produce similar effects to listening to other music? Seeing music listening and wellbeing as comprised by the music and the physiology alone ignores important factors which were highlighted by the current findings, such as the listeners' existing wellbeing or their associations with the music. The complex relationship between the individual, the music, and the listening context must be taken into consideration (MacDonald and Knox, 2016). Music listening for wellbeing tools, such as MY Music and self-prescription discussed here, are used very specifically and cannot simply be replaced by algorithmically produced music, no matter how effective the algorithm is. Blanket recommendations and one-size-fits-all models, even if somewhat personalised, may not be appropriate.

Healthcare

Music listening has been found to have positive effects on a wide range of psychological and physiological aspects, as discussed in Chapter 2. However, the use of personal music listening for health and wellbeing reasons is not yet established, at least not formally, in the healthcare sector. The value of the arts for health and wellbeing is increasingly acknowledged, but, at least in the UK, this is mainly reflected through the newly established social prescription model, through which GPs, nurses, and other primary care professionals can prescribe a range of local, non-clinical services to patients. The rationale behind social prescription is that non-clinical activities can support quality of life, enhance health and wellbeing, and prevent illness in a cost-effective way without over-medicalisation. In fact, speaking at the 2018 NHS Expo in Manchester, the Health Secretary, Matt Hancock, argued that there is growing evidence that social prescribing can be better for patients than medicine (Campbell, 2018). The key aspect of these activities prescribed, however, is that they are social and not their focus on art, for example.

Robust and systematic evidence on the effectiveness of social prescribing is limited and there are challenges when it comes to evaluating the outcomes of such complex interventions (The King's Fund, 2017). On the other hand, personal music listening would be much easier to assess, control, and administer, as it relies on existing resources; however if music listening was to be prescribed by medical staff, certain conditions must be observed. Using blanket recommendations would be ineffective and potentially harm-

ful. The prescription of music listening would have to draw on the listeners' expertise as long-term self-medicators, with medical practitioners not making judgements on the music, but rather the rationale behind music choices. Medical staff would have to be aware of potential negative side-effects and hold an informed discussion with the patients, co-creating a broad and adaptable music listening plan. This would require approaching this as a co-production of health, through recognising people as assets and building upon their existing capabilities, with medical professionals focusing more on facilitating rather than delivering (Boyle et al., 2010). Such music listening prescription would be highly cost-effective and only require a minimal investment of time from the medical practitioners, as well as training on the subject.

While far from a nation-wide formal use of music listening for wellbeing, *Music on Prescription* is a promising upcoming UK-based project that will facilitate the use of personally curated music for wellbeing, supported by NHS24. It aims to reduce the number of global suicides through the power of music and additional self-help resources. They use music powered by *Spotify*, however, users have to answer carefully crafted questions to create their own "feel good" playlists of music linked to positive personal memories. It would be essential to find out what questions users are asked, but nonetheless, *Music on Prescription* could be seen as a way of listeners managing and administering music listening as demonstrated by the AMLAW model. Overall, the prescription of music listening for wellbeing could be an appropriate and promising next step, however, only if undertaken according to certain conditions.

9.7 Conclusion

This thesis explored music listening and health and wellbeing in the international general population through the innovative use of crowdsourcing. It had a broad scope and used a mixed-methods design to access a diverse international sample. Two surveys and 20 interviews were used to collect quantitative and qualitative data that were then analysed and integrated, providing a holistic insight into music listening for wellbeing in everyday life.

This thesis offered further understanding of the important and complex relationship between music listening and health and wellbeing. The proposed AMLAW model highlighted the different forms music listening for wellbeing can take at different health and wellbeing points, and music listening for wellbeing tools were presented. Negative side-effects and risk were also explored, as well as other aspects important for music listening for wellbeing, such as the Virtuous Cycle. Following the presentation of these findings, the study's limitations were discussed, and directions for further research were presented, focusing mainly on obtaining further insight into the proposed

tools and model. Practical research implications for everyday music listening, the music listening industry, and the healthcare sector were finally discussed, to provide a context for the findings and their meaning in today's world.

Music listening and health and wellbeing is a topic that has attracted considerable interest, with vast bodies of research focusing on specific music listening functions or particular sub-populations. This research, focusing on music listening in general, and in the international general population, allowed to explore factors that could influence music listening, presenting tools and a model that could be applicable for all listeners. This is not to say that music listening for wellbeing is the same for all; quite the contrary. Looking at music listening from afar, in other words, reveals characteristics that highlight exactly the opposite. It is not about the specific music, nor specific music listening behaviours alone. Music listening for wellbeing is an important salutary resource, adaptable and sophisticated, but individual and contextual. Music listening outcomes, and, ultimately, whether music listening can help a listener, has to do mainly with their relationship with music, and the specific music chosen. Intramusical characteristics cannot predict outcomes. A one-size-fits-all model won't do. It may be true that we now have access to more recorded music than we ever have, but at the end of the day, we alone know what we want to listen to and what will help us.

Appendix A

Interviews - Ethical approval application

See next pages for the ethical approval application submitted for the interviews and the completion receipt.

PGR Self Audit Checklist for Ethical Purposes 2016

Response ID	Completion date
193399-193392-23248628	17 May 2017, 22:01 (BST)

Student name	Joy Tzou Vamvakari

Universal username (UUN)	S1563285

Programme name	PhD Music

Title of Project	Music Listening, Health and Wellbeing in everyday life - interviews

Project Supervisor / Tutor	Prof Raymond MacDonald

Funding Body (if applicable)	ECA

Are there any issues of confidentiality which are not adequately handled by the normal tenets of ethical academic research?	No

Are there issues of data handling, management and consent which are not adequately dealt with and compliant with academic procedures?	No

Are there any special moral issues/conflicts of interest?	No

Is there a potential for harm or stress for those involved in your research?	No

Is there a potential for physical harm or stress for those involved in your research?	No

Is there a potential for risk to the researcher?	No

Is there any aspect of the proposed research which might bring the University into disrepute?	No

Are any of the participants or interviewees in the research vulnerable, e.g. children and young people?	No

Does your research concern groups which may be construed as terrorist or extremist?	No

PGR Self Audit Checklist for Ethical Purposes 2016

100% complete

You have finished this self-assessment.

Completion receipt

Receipt number: 193399-193392-23248628
Submission time: 2017-05-17 22:01:33 BST

Appendix B

The Survey 1 consent form and information sheet

See next page for the Survey 1 consent form and information sheet.

Edinburgh College of Art
University of Edinburgh

Consent for Participation, Survey Research and Data Storage

Study title:	Leisure and wellbeing – a preliminary study
Supervisor:	Professor Raymond MacDonald
Researcher:	Joy Vamvakari

What you will be doing. This is a survey study, for which you are asked to complete a 2-minute online survey posted on *Crowdflower*. The survey questions are multiple choice, and ask you about your wellbeing and the leisure activities you do in your free time.

Compensation. To thank you for your help in this study you will be awarded through *Crowdflower* once you complete the survey and finish the job.

Risks. There are no known risks to participation in this study.

Confidentiality. The data we collect will not be associated with any personal details that might identify you. All information collected will be stored securely and with confidentiality.

Voluntary participation and right to withdraw. Participation is voluntary and you can withdraw from the study at any time and for any reason.

Contact information. This research is taking place at the University of Edinburgh in Scotland. If you have questions or comments about this study please contact Joy Vamvakari at T.Vamvakari@sms.ed.ac.uk.

Support. This research is funded by the University of Edinburgh College of Art.

If you have any questions about what you've just read, please feel free to ask them now.

By accepting this job, you consent to the following:

1. I agree that the anonymized data I produce may be **kept permanently in Edinburgh University archives** and used **for the specific research project** which collected them.
2. I agree that the anonymized data I produce **may be used by the above-named researchers, as well as by other qualified researchers, for teaching or research purposes, and in professional presentations and publications**.
3. I understand that I have the **right to terminate this session** at any point. If I choose to **withdraw after completing the study**, my data will be deleted at that time.

Thank you for your help!

Appendix C

The Survey 2

See next pages for the Survey 2, focusing on music listening and health and wellbeing in everyday life. It includes a consent form.

* Survey Information

This is a 20-minute online survey asking about your music listening habits and wellbeing.
Please answer all the questions honestly, thinking aboutyour everyday life, your experiences and opinions. Please read all instructions and reply to all questions carefully. Do not answer randomly, as you will not receive compensation if the survey is not filled in correctly.

This survey is part of an important research project at the University of Edinburgh, Scotland, undertaken by Joy Vamvakari and Professor Raymond MacDonald, focusing on how music listening can be used in everyday life to increase wellbeing. You can find further information about this research here.

Your participation in this study is voluntary and you can withdraw at any time and for any reason, by closing the online survey. However, compensation will not be given if the survey is not fully and correctly completed.

Compensation: To thank you for your help in this study, you will receive $2.50 through*CrowdFlower*. At the end of the survey, you are asked to fill in your *CrowdFlower* ID, and then you will be given a code which you will have to fill in on the *CrowdFlower* job. When you complete the survey you will be paid $0.01 immediately. After your answers have been checked to make sure that the survey has been completed correctly, you will be paid $2.49 as a bonus. within the next 2 working days.

Contact information: If you have questions or comments about what you have just read or about this research, or you would like to know the results of this study, please contact the researchers at T.Vamvakari@sms.ed.ac.uk and Raymond.MacDonald@ed.ac.uk

By participating in this study, you confirm the following:

1. You confirm that you have read and understood this information sheet.

2. You agree that the anonymized data produced may be kept permanently in Edinburgh University archives and used for this specific research project.

3. You agree that the anonymized data collected may be used by the above-named researchers, as well as other qualified researchers, for teaching or research purposes, and in professional presentations and publications.

4. You understand that you have the right to close the survey at any point, and your data will be deleted at that time.

Do you agree with the above?

- ◯ Yes, I agree to participate in this study and will fill in this survey
- ◯ No, I do not agree to participate in this study and want to terminate the survey

* What is your age?

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65+

* Please describe your gender and/or sexuality

* What is your nationality? If you have dual or multiple nationalities, please choose the last answer: "Other, Bi-national or Multi-national"

* What is the highest level of education you've completed?

- ◯ none at all
- ◯ primary school
- ◯ secondary school
- ◯ undergraduate degree
- ◯ postgraduate degree
- ◯ technical, practical or vocational education
- ◯ Other (please explain)

* Please tell us how frequently or infrequently you have had each experience within the last month. Please answer according to what really reflects your experience rather than what you think your experience should be. Answer according to your own opinion of what is generally true for you.

	never or very rarely true	rarely true	sometimes true and sometimes not true	often true	very often or always true
I am easily distracted	○	○	○	○	○
I pay attention to how my emotions affect my thoughts and behavior	○	○	○	○	○
My natural tendency is to put my experiences into words	○	○	○	○	○
In difficult situations, I can pause without immediately reacting	○	○	○	○	○
I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow	○	○	○	○	○
I think some of my emotions are bad or inappropriate and I shouldn't feel them	○	○	○	○	○
Even when I'm feeling terribly upset, I can find a way to put it into words	○	○	○	○	○
I notice the smells and aromas of things around me	○	○	○	○	○
I feel I am "running on automatic" without much awareness, nor paying attention to what I'm doing	○	○	○	○	○
When I feel something in my body, it's hard for me to find the right words to describe it	○	○	○	○	○
I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing	○	○	○	○	○
When I have distressing thoughts or images, I don't let myself be carried away by them	○	○	○	○	○
I find it difficult to stay focused on what's happening in the present moment	○	○	○	○	○
I pay attention to physical experiences, such as the wind in my hair or sun in my face	○	○	○	○	○
I tell myself that I shouldn't be feeling the way I'm feeling	○	○	○	○	○
I'm good at finding the words to describe my feelings, beliefs, opinions and expectations	○	○	○	○	○

* How would you rate your quality of life? (based on the past month)

◯ very poor ◯ poor ◯ neither poor nor good ◯ good ◯ very good

* In general how would you say your health is (based on the past month)?

◯ very poor ◯ poor ◯ neither poor nor good ◯ good ◯ very good

* How much did you enjoy life during the past month?

◯ not at all ◯ a little ◯ moderately ◯ very much ◯ extremely

* How meaningful do you feel your life is in general (based on the past month)

◯ not at all ◯ a little ◯ moderately ◯ very much ◯ extremely

* How often did you have negative feelings such as blue mood, despair, anxiety, depression during the past month?

◯ never ◯ rarely ◯ some days ◯ most days ◯ every day

* Do you face physical or mental health challenges in your everyday life?

- ◯ no
- ◯ yes

* Please describe what physical or mental health issues you face (for example: a recent operation, depression, autism or Asperger's syndrome, chronic pain)

If you have a medical diagnosis, please describe this briefly

* What kind of things do you do to **feel better** about yourself and your life? (Please give examples and describe, such as exercising, watching movies, drawing)

* What kinds of things make you **feel worse** about yourself and your life? (Please give examples and describe, such as financial difficulties, bad weather, anything that brings you down)

* Do you play a musical instrument? (for example, as a beginner, an expert, just for fun, for a living)

- ◯ yes
- ◯ no

* Do you do play music as a hobby or professionally?

- ◯ as a hobby, for fun
- ◯ professionally
- ◯ both

Tell us what musical instrument you play, what kind of music, and in what context (optional)

* Do you sing? (for example, in the shower, for a living, in concerts, in a choir, singing along to your favourite songs)

- ◯ yes
- ◯ no

* Do you sing as a hobby or professionally?

- ◯ both
- ◯ professionally
- ◯ as a hobby, for fun

Tell us about what you sing, where and when (optional)

* Please select any of the following statements that describe your music education

- [ ] I have had 1 or 2 music lessons
- [ ] A friend or family member has taught me music
- [ ] I have had private music lessons
- [ ] I have studied music for over 2 years
- [ ] I have studied music at school
- [ ] I have studied music at a conservatoire or at University
- [ ] I have taught myself music
- [ ] I have no music education
- [ ] I have certificates in music and have passed music exams
- [ ] I have studied music for 1-2 years
- [ ] Other (please explain)

* People give many reasons for listening to music. How often do you listen to music for these reasons?

	never	rarely	sometimes	quite often	very often
for no reason	○	○	○	○	○
to dance	○	○	○	○	○
to relax and calm down	○	○	○	○	○
to fill the silence	○	○	○	○	○
to have it in the background while doing other things	○	○	○	○	○
to pass the time	○	○	○	○	○
to soothe your physical pain	○	○	○	○	○
to feel a greater sense of belonging	○	○	○	○	○
to play, sing, whistle or hum along	○	○	○	○	○
to enjoy the music	○	○	○	○	○
to feel less lonely	○	○	○	○	○
to reduce anxiety and stress	○	○	○	○	○
to feel somebody else feels the same way you do	○	○	○	○	○
to listen to the lyrics	○	○	○	○	○
to get energized and motivated	○	○	○	○	○
to remember a particular experience, person or period of your life	○	○	○	○	○
to distract yourself and escape from the outside world	○	○	○	○	○
to create a personal space or avoid contact with others	○	○	○	○	○
to change your mood and how you feel	○	○	○	○	○
to express yourself	○	○	○	○	○
to create a certain image of myself	○	○	○	○	○
to help you do things you would normally find physically difficult	○	○	○	○	○
to feel more confident and in control of your life	○	○	○	○	○
to better understand your thoughts and feelings	○	○	○	○	○
to better cope with problems, worries or sadness	○	○	○	○	○
to help you concentrate and think	○	○	○	○	○

Other (please explain)

* When you are choosing what music to listen to, how important are these factors?

	not at all	a little	moderately	very much	extremely
the music itself (genre, tempo, etc.)	○	○	○	○	○
if you know this music	○	○	○	○	○
if you like this music	○	○	○	○	○
what memories this music is attached to	○	○	○	○	○
if you can sing, play or dance to this music	○	○	○	○	○

What other factors that are important to you when choosing what music to listening to?

* How often do you listen to music in these ways?

	never	rarely	sometimes	quite often	very often
music performed live, for example at a concert	○	○	○	○	○
music on TV	○	○	○	○	○
music on the radio	○	○	○	○	○
someone else's playlist	○	○	○	○	○
a specific album, artist or piece	○	○	○	○	○
music on random or shuffle	○	○	○	○	○
your playlists	○	○	○	○	○
someone else's music suggestion	○	○	○	○	○
music in shops or public spaces	○	○	○	○	○
music in your head (replaying music you have heard before or creating new music)	○	○	○	○	○

Other (please explain)

* Has how and why you listen to music changed during your life?

- ◯ no
- ◯ yes

* Please describe how the ways you listen to music have changed during your life. Do you listen to music for different reasons than you used to?

* How often do you do the following?

	never	sometimes	quite often	very often	always	N/A
listen to music when you are with people you don't know	◯	◯	◯	◯	◯	◯
listen to music when you go out or at a party	◯	◯	◯	◯	◯	◯
listen to music when you are relaxing	◯	◯	◯	◯	◯	◯
go to music concerts or performances	◯	◯	◯	◯	◯	◯
listen to music when you are on your own	◯	◯	◯	◯	◯	◯
listen to music when doing repetitive tasks or housework	◯	◯	◯	◯	◯	◯
listen to music when you are shopping	◯	◯	◯	◯	◯	◯
listen to music when you are having a meal	◯	◯	◯	◯	◯	◯
listen to music when working or studying	◯	◯	◯	◯	◯	◯
listen to music when driving	◯	◯	◯	◯	◯	◯
listen to music as the main activity, not to accompany another activity	◯	◯	◯	◯	◯	◯
listen to music when you are exercising	◯	◯	◯	◯	◯	◯
listen to music when you are with friends, family or your partner	◯	◯	◯	◯	◯	◯

* How often do you listen to music?

◯ never ◯ rarely ◯ some days ◯ most days ◯ every day

* On average, how many hours per week do you listen to music?

◯ less than 3 hours per week ◯ 3-7 hours per week ◯ 7-15 hours per week ◯ more than 15 hours per week

* How noisy or quiet is your everyday environment?

◯ extremely noisy ◯ quite noisy ◯ not noisy nor quiet ◯ quite quiet ◯ extremely quiet

Tell us about the sounds and noise you hear in your everyday environment (optional)

* How important is music in your life?

◯ not important at all ◯ of little importance ◯ somewhat important ◯ quite important ◯ very important

* How much does listening to music influence your wellbeing positively?

◯ not at all ◯ a little ◯ moderately ◯ very much ◯ extremely

* How much does listening to music influence your wellbeing negatively?

◯ not at all ◯ a little ◯ moderately ◯ very much ◯ extremely

* Has listening to music helped you cope with difficult times in your life?

◯ no

◯ yes

* Please describe the last time that listening to music helped you

* Has listening to music not been helpful in certain situations?

- ◯ yes
- ◯ no

* In what situation and why do you think listening to music didn’t help you? How and when did you realise that it wasn't helpful?

* Please tell us why you think listening to music might not help you

* What advice would you give a friend on how to use music listening to feel better about their life?

Do you have anything to add about the role of music listening in your life or about this study in particular? (optional)

* Please enter your CrowdFlower Contributor ID here, so you receive the bonus.

Make sure you write your Contributor ID correctly. If what you write here does not match with the CrowdFlower ID provided by the system, then you cannot be paid.

To finish this survey click DONE.
After you click DONE you cannot change your answers to the survey.

You need to write a code into CrowdFlower. The code is on the next page.

Thank you very much for your help.

Appendix D

The interview protocol

Music Listening and Health and Wellbeing in everyday life - Interview Protocol

Interviewee:

Prolific ID:

Introduction and explanation of the project

My name is Joy Vamvakari, and I am a PhD researcher at the University of Edinburgh. My research focuses on Music Listening in everyday life and its relationship with health and wellbeing, and all results will be included in my PhD thesis.

Today I would like to find out about music listening in your life, and I will ask you questions about your life, your health and wellbeing and your music and music listening. There are no right or wrong answers, so please be as honest as you can be in helping me understand the role of music listening in your life. I will be asking you about your health and possibly about difficult situations in your life. If at any point you feel uncomfortable and wish to move on to the next question, please tell me you wouldn't like to discuss this further. I would like you to feel comfortable to say what you really think.

This interview will last around one hour, but might take a bit longer, so that is why I have asked you to make sure you are free for 2 hours. Are you ok with this?

I have several questions that I would like to cover, and I might need to interrupt you if I need to move on to the next question. I will be looking at my notes, so please don't worry if I'm not always looking at the camera. When the interview is completed, I will send you the completion link so you can be paid through Prolific Academic, within 24 hours.

Oral consent

To help note-taking, I would like to record video and audio from this interview. Only I and my supervisors will have access to these, and they will be used only for this research. Your participation in this interview is voluntary and you can ask me to stop this interview at any time. All information is confidential. You have chosen to use the name, is this correct?

Do you confirm that you have understood this information and that you agree to voluntarily participate in this interview, which will be recorded?

Establishing rapport

- Why did you get involved in this study?[1] ※
- What are you expecting? Have you done anything like this before?

Section 1: Context – location, situation, wellbeing, health

- Please tell me about your current situation? Where? Local time? What do you do? What does your usual day look like? ※
- Can you tell me about your general health? What? Diagnosis? Negative feelings? How does it affect your life? When? Since when? Role of others? ※
- What makes you feel better about yourself and your life? What? When? How? Why? What activities do you do to feel better and manage your problems? ※
- What makes you feel worse about your life? What makes your day a bad day? What? When? Who? Why? What do you do? ※

Section 2: Music and music listening

- Music, what role does it have in your life? Study? Learn? Listen? Play? Sing? Create? Live performances? Importance? ※
- Tell me about music listening, how important is it to you? How frequently? When? How? Where? Do you do something else while you listen? How do you choose what to listen to? Do you spend money on music to listen to? Do you have favourite artists that you follow and go to their concerts? Why are they important to you? ※
- When is the first time you remember listening to music? What was it? When? How do you feel about this music now? ※

[1]Questions marked with an asterisk were asked to all participants. Those not marked were asked only if relevant or if further probing was needed.

- Has the way you listen to music changed as you became older? Differences? Why do you think this happened? ※
- When was the last time you listened to music? What? Why? Where? When? What happened?
- How do you choose what music to listen to and when? What do you think about?
- Do you ever listen to music when you are with other people? What situation? Who chooses the music and what happens?

Section 3: Self reflection on music listening and health and wellbeing

- What music or song can't you live without? ※
- When do you listen to it? how do you feel like when you listen to it? What does it mean for you? Why?
- If you were in a movie and you had a choose a song or piece of music as a soundtrack for your life, what would it be? Why?
- Is there any specific music or song that has a special meaning for you? When do you listen to it? Why? How does it influence your day?
- When listening to music have you ever noticed any changes in your body? What? Why? When? ※
- When was the last time you listened to music for a specific reason? Describe the scene; Where were you? What? When? Why? What happened?
- Do you listen to music to make yourself feel better? How? Why? Why not? What? What happened? What did it do to your mood? Did it work? Why? Why not?
- Was there a difficult time when you listened to music to feel better? What was the situation? What happened? How did music help? ※
- What can listening to music help you with? How? Why? When? How is it different than other things? Are there things it can't help with?
- If you were ill, in pain or recovering from surgery, would you listen to music? Why? Why not? What? How would it help? ※
- If you had lost someone you loved, if someone had passed away or you broke up with your loved one, would you listen to music? Why? Why not? What? How would it help?
- If you were going to listen to music to feel better, what do you need to know to do this? what do you need to think about?

- Have you ever listened to music to feel better and it didn't work? What? When? Why didn't it work?
- Is there any music or song that had an unexpected effect on you? What? How did you find out? Why? What did you do?
- Has listening to music ever felt difficult? When? What situation? Why? What did you do? What has changed since then? ※
- Did you ever have to turn off the music you were listening to because it made you feel worse? What? Why? When? What happened? How did you feel when listening? What do you do since then?
- Is there a risk in listening to music sometimes? Are there negative aspects? What? When? Why? ※
- Is there anyone you know that hates listening to music? Or anyone who thinks that listening to music is silly? Who? Why? What music? Do you get a sense that there are differences between people that listen to music more than others?
- Do you think that someone can use music to make people feel uncomfortable? Example? How? Why?
- Do you think that listening to music is different for you and other people? How? Why? ※
- Do you talk about what music you listen to with your friends? What do you say?
- If a friend asked you for advice about what do to feel better, what would you say?
- Can you please complete the sentence: For me, listening to music is /ldots? ※
- Is there anything else that we haven't discussed that is important to you about listening to music? ※

Probes:

- That's interesting, tell me more about this
- How do you mean?
- Could you tell me more about it?
- I'm not sure I know what you mean by ...
- Could you tell me a little bit more?
- I would now like to move on to ...
- You said ... can you clarify?

If sensitive topics are introduced by the participants, I will advise them to seek support from their local counselling services.

Close

Thank you very much for talking to me today. This has been very helpful. Do you have any final comments? How do you feel about this interview? Do you have any questions?

Now that our interview is finished, I will process your payment within 24 hours. If you have any questions about this study, feel free to email me. Thank you again.

Appendix E

The Survey 1

Leisure activities and wellbeing – A 2-minute survey

1. What is your gender? (multiple choice)
    - Male
    - Female
    - Other
    - Prefer not to say
2. What is your age? (multiple choice)
    - 18-24 years old
    - 25-34 years old
    - 35-44 years old
    - 45-54 years old
    - 55-64 years old
    - 65 or older
3. My current location is: (multiple choice)
   ISO-3166 list of countries
4. I consider myself: (multiple choice)
   Adapted from the ISO-3166 list of countries

5. How do you feel about your life as a whole[1]? (Likert scale)
   (a) Terrible
   (b) Unhappy
   (c) Mostly dissatisfied
   (d) Mostly satisfied
   (e) Pleased
   (f) Delighted
6. In general, would you say your health is[2]: (Likert scale)
   (a) Poor
   (b) Fair
   (c) Good
   (d) Very good
   (e) Excellent
7. How often do you exercise or play sport[3]? (Multiple choice)
   - Never
   - A few times a month
   - A few times week
   - Every day
   - Several times a day

   When you do, how long do you exercise or play sport for? (on average)(Multiple choice)
   - 10 minutes
   - 20 minutes
   - 30 minutes
   - Around an hour

[1] Single item wellbeing measure (*Delighted-Terrible Scale*, original version). Andrews, F.M. & Withey, S.B. (1976). *Social Indicators of Well-being: Americans' Perceptions of Life Quality*, Plenum Press. New York, USA.

[2] General self-rated health single measure (GSRH), included in the *Short Form Health Survey (SF-36)*, RAND Corporation.

[3] Questions 7-10 appeared at a randomised order.

- Around two hours
- Over 2 hours

8. How often do you watch TV or movies? (Multiple choice)
    - Never
    - A few times a month
    - A few times week
    - Every day
    - Several times a day

    When you do, how long do you watch TV or movies for? (on average)(Multiple choice)
    - 10 minutes
    - 20 minutes
    - 30 minutes
    - Around an hour
    - Around two hours
    - Over 2 hours
9. How often do you listen to music? (Multiple choice)
    - Never
    - A few times a month
    - A few times week
    - Every day
    - Several times a day

    When you do, how long do listen to music for? (on average)(Multiple choice)
    - 10 minutes
    - 20 minutes
    - 30 minutes
    - Around an hour
    - Around two hours

- Over 2 hours

10. How often do you read books, magazines, newspapers or articles (online/offline)? (Multiple choice)
    - Never
    - A few times a month
    - A few times week
    - Every day
    - Several times a day
11. When you do, how long do read for? (on average)(Multiple choice)
    - 10 minutes
    - 20 minutes
    - 30 minutes
    - Around an hour
    - Around two hours
    - Over 2 hours

Appendix F

Survey 2 - Reported health difficulties

Table F.1: Survey 2 - Health difficulties summary.

Category	Count	Percentage (N=215)
Physical health difficulties	42	20%
Mental health difficulties	42	20%
Complex health difficulties	4	2%
Congenital	5	2%
Chronic	17	8%
Common symptoms/low impact	22	10%
Significant impact	12	6%

Table F.2: Survey 2 - Physical health difficulties.

Category	Count	Percentage (N=215)
Pain	18	8%
Myoskeletal	15	7%
Gastrointestinal	6	3%
Respiratory	4	2%
Cardiological	4	2%
Chronic	17	8%
Vision	2	1%
Injuries	2	1%
Gynaecological/Urological	2	1%
Dermatological	1	0.5%
Obesity	1	0.5%
Diabetes	1	0.5%
Cancer	1	0.5%
Other e.g. chronic fatigue syndrome, pregnancy, or VSD	5	2%

Table F.3: Survey 2 - Mental health difficulties.

Category	Count	Percentage (N=215)
Depression	30	14%
Stress	4	2%
Social disorders	4	2%
PTSD	2	1%
OCD	2	1%
Bereavement	2	1%
Suicidal intentions	1	0.5%

Appendix G

The filters used on *Prolific* for interview participant recruitment

Filters used throughout the interview recruitment:

- Age - over 18
- Record video - yes
- Fluent in English - yes
- Skype - yes
- Video call interview - yes

Table G.1: Filters used during interview participant recruitment.

Stage	Filters used	Recruited	Eligible users
1	Approval rate - 90% Minimum previous submissions - 10	2	152 of 34,323
2	Approval rate - 90% Minimum previous submissions - 5 Sex - Male	2	78 of 34,323
3	Approval rate - 85% Minimum previous submissions - 5 Nationality - Not UK Residence - Not UK	2	527 of 34,323
4	Approval rate - 85% Minimum previous submissions - 5 Age - over 35 Nationality - Not UK	2	49 of 34,323
5	Approval rate - 85% Minimum previous submissions - 3 Age - over 35 Nationality - Not UK, US Sex - Female	2	27 of 34,323
6	Approval rate - 85% Minimum previous submissions - 3 Age - under 25 Nationality - Not UK, US	2	62 of 34,323
7	Approval rate - 85% Minimum previous submissions - 3 Age - under 25 Chronic disease - yes	2	250 of 34,323
8	Approval rate - 85% Minimum previous submissions - 3 Age - under 25 Nationality - Not UK, US, Portugal Daily impact of mental illness - yes Mental health condition ongoing - yes	2	130 of 34,323
9	Approval rate - 85% Minimum previous submissions - 3 Nationality - not UK, US, Portugal	2	786 of 34,323
10	Approval rate - 85% Minimum previous submissions - 3 Age - over 45 Nationality - Not UK, US, Portugal	1	9 of 34,323
11	Approval rate - 85% Minimum previous submissions - 3 Age - under 24 Nationality - Not UK, US, Portugal, Italy	1	37 of 34,323

Appendix H

The pre-interview questionnaire

1. What is your age? (Multiple choice)
    - 18-24
    - 25-34
    - 35-44
    - 45-54
    - 55-64
    - 65+
2. What is your gender and sexuality? (Open-ended)
3. What is your nationality? (Multiple choice)
4. What is the highest level of education you've completed? (Multiple choice)
    - None at all
    - Primary school
    - Undergraduate degree
    - Postgraduate degree
    - Technical, practical, or vocational education
    - Other
5. How would you rate your quality of life (based on the past month)? (Likert scale)
    - Very poor
    - Poor

- Neither poor nor good
- Good
- Very good

6. In general how would you say your health is (based on the past month)? (Likert scale)
    - Very poor
    - Poor
    - Neither poor nor good
    - Good
    - Very good
7. Do you face physical or mental health challenges in your everyday life? (Multiple choice)
    - Yes
    - No
8. Do you play a musical instrument? (for example, as a beginner, an expert, just for fun, for a living) (Multiple choice)
    - Yes
    - No
9. Do you sing? (for example, in the shower, for a living, in concerts, in a choir, singing along to your favourite songs) (Multiple choice)
    - Yes
    - No
10. How often do you listen to music? (Multiple choice)
    - Never
    - Rarely
    - Some days
    - Most days
    - Every day
11. Please provide three time-slot options on the (x date) to conduct the interview. Please also provide your time-zone. I will contact you to tell you which of these

options is also good for me, or if we need to agree some other date and time. (Open-ended)

12. What is your Skype username? I will need to add you on Skype to do the interview. When the interview is completed I will remove your from my contact list. (Open-ended)

13. What name would you like to use during the interview? This can be a pseudonym or your real name. It will also be used in conference presentations and in writing the results of this study. (Open-ended)

Appendix I

The transcription key

Transcription key	
Short pause	(.)
Pause of one second or longer	(1)
Laughter	(L)
Emphasis in original speech	CAPITALISATION
Explanations of material	[ ]
Material which could not be heard clearly	( )
Interviewer speaking	I:
Participant speaking	Capitalised initial of their chosen name

Adapted from MacDonald et al. (2002).

References

Aladhadh, S., XZhang, X., and Sanderson, M. (2014). Tweet author location impacts on tweet credibility. In *Proceedings of the Australasian Document Computing Symposium*, pages 73–76.

Aldridge, D. (1996). *Music Therapy Research and Practice in Medicine: From Out of the Silence*. Jessica Kingsley Publications.

All-Party Parliamentary Group on Arts Health and Wellbeing (2017). Creative Health: The Arts for Health and Wellbeing. Technical Report July, All-Party Parliamentary Group on Arts, Health and Welbeing.

Anderson, C. A., Carnagey, N. L., and Eubanks, J. (2003). Exposure to violent media: The effects of songs with violent lyrics on aggressive thoughts and feelings. *Journal of Personality and Social Psychology*, 84:960–971.

Ansdell, G. and DeNora, T. (2012). Musical Flourishing: Community music therapy, controversy and the cultivation of wellbeing. In MacDonald, R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 97–112. Oxford University Press, Oxford.

Antonovsky, A. (1987). *Unravelling the mystery of health*. Jossey-Bass, San Francisco.

Antonovsky, A. (1996). The salutogenetic model as a theory to guide health promotion. *Health Promotion International*, 11:11–18.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., and Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1):27–45.

Bailey, J. (2008). First steps in qualitative data analysis: Transcribing. *Family Practice*, 25(2):127–131.

Baltazar, M. and Saarikallio, S. (2016). Toward a better understanding and conceptualization of affect self-regulation through music: A critical, integrative literature review. *Psychology of Music*, 44(6):1500–1521.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology*, 52(1):1–26.

Barbour, R. (2008). *Introducing Qualitative Research: A student's Guide to the Craft of Doing Qualitative Research*. Open University Press, UK.

Barcewicz, E. (2012). *Adolescents' use of music to achieve mood regulation goals*. PhD thesis, Massachusetts School of Professional Psychology.

Barratt, M. J. (2012). The efficacy of interviewing young drug users through online chat. *Drug & Alcohol Review*, 31(4):566–572.

Barthes, R. (1985). *The responsibility of forms: Critical essays on music, art, and representation*. University of California Press, Berkeley.

Bartram, D. and Boniwell, I. (2007). The science of happiness: Achieving sustained psychological wellbeing. *In Practice*, 29(8):478–482.

Bassett, L., Bingley, A. F., and Brearley, S. G. (2018). Silence as an element of care: A meta-ethnographic review of professional caregivers' experience in clinical and pastoral settings. *Palliative Medicine*, 32(1):185–194.

Batt-Rawden, K. B. (2010). The Role of Music in a Salutogenic Approach to Health. *International Journal of Mental Health Promotion*, 12(2):11–18.

Batt-Rawden, K. B., DeNora, T., and Ruud, E. (2005). Music listening and empowerment in health promotion: A study of the role and significance of music in everyday life of the long-term ill. *Nordic Journal of Music Therapy*, 14(2):120–36.

Beckmann, H. B. (2013). Music, adolescents and health: narratives about how young people use music as a health resource in daily life. *Musical Life Stories: Narratives on Health Musicking*, 6:95–116.

Belfi, A. M., Karlan, B., and Tranel, D. (2015). Music evokes vivid autobiographical memories. *Memory*, 24(7):979–989.

Belfi, A. M. and Loui, P. (2019). Musical anhedonia and rewards of music listening: current advances and a proposed model. *Annals of the New York Academy of Sciences*, pages 1–17.

Benwell, B. and Stokoe, E. (2006). *Discourse and Identity*. Edinburgh University Press, Edinburgh.

Bigand, E. and Poulin-Charronnat, B. (2006). Are we "experienced listeners "? A review of the musical capacities that do not depend on formal musical training. *Cognition*, 100:100–130.

Bishop, D. T., Karageorghis, C. I., and Loizou, G. (2007). A grounded theory of young tennis players' use of music to manipulate emotional state. *Journal of Sport and Exercise Psychology*, 29:584–607.

Blacking, J. (1973). *How Musical Is Man*. University of Washington Press, Washington, 1st edition.

Bodner, E. and Bensimon, M. (2015). Problem music and its different shades over its fans. *Psychology of Music*, 43(5):641–660.

Boer, D. and Abubakar, A. (2014). Music listening in families and peer groups: Benefits for young people's social cohesion and emotional well-being across four cultures. *Frontiers in Psychology*, 5(MAY):1–15.

Boer, D. and Fischer, R. (2012). Towards a Holistic Model of Functions of Music Listening across Cultures: A Culturally Decentred Qualitative Approach. *Psychology of Music*, 40(2):179–200.

Bohlmeijer, E., ten Klooster, P. M., Fledderus, M., Veehof, M., and Baer, R. (2011). Psychometric properties of the five facet mindfulness questionnaire in depressed adults and development of a short form. *Assessment*, 18(3):308–320.

Boyle, D., Coote, A., Sherwood, C., and Slay, J. (2010). Right here, right now: Taking co-production into the mainstream. Technical report.

Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2):77–101.

Brewer, L. R. and Miller, D. J. (2003). *The A-Z of Social Research*. SAGE Publications, London.

British Psychological Society (2014). Code of Human Research Ethics. Retrieved March 19 2017 from the British Psychological Society website: http://www.bps.org.uk/sites/files/documents/code_of_human_research_ethics.pdf.

British Psychological Society (2017). Ethics Guidelines for Internet-mediated Research. Retrieved November 23 2018 from the BPS website: www.bps.org.uk/publications/policy-and-guidelines/research-guidelines-policy-documents/research-guidelines-poli.

Brown, B., Rutherford, P., and Crawford, P. (2015). The role of noise in clinical environments with particular reference to mental health care: a narrative review. *International Journal of Nursing Studies*, 52(9):1514–1524.

Brown, J. D. and Bobkowski, P. S. (2011). Older and newer media: Patterns of use and effects on adolescents' health and well-being. *Journal of Research on Adolescence*, 21(1):95–113.

Brown, K. W. and Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological wellbeing. *Journal of Personality and Social Psychology*, 84:822–848.

Bryman, A. (2006). Paradigm peace and the implications for quality. *International Journal of Social Research Methodology*, 9:111–126.

Bryman, A. (2008). *Social Research Methods*. Oxford University Press, New York, 3rd edition.

Bureau of Labor Statistics (2015). American Time Use Survey. Technical report, Bureau of Labor Statistics.

Burns, T. (2002). *Erving Goffman*. Routledge, London.

Byrne, D. (2002). *Interpreting qualitative data*. SAGE Publications, London.

Cabrall, D. C., Lu, Z., Kyriakidis, M., and de Winter, J. (2016). Validity and reliability of naturalistic driving scene categorisation judgements from crowdsourcing. In *Proceedings of the 17th International Conference Road Safety on Five Contintinents (RS5C)*, Rio de Janeiro, Brazil.

Caldwell-Brown, S. and Krause, A. (2016). A psychological approach to understanding the varied functions that different music formats serve. In *Proceedings of the 14th International Conference on Music Perception and Cognition (ICMPC)*, pages 849–851, San Francisco.

Campbell, D. (2018). NHS should expand 'social prescribing', says health secretary. Retrieved November 13 2019 from The Guardian website: https://www.theguardian.com/society/2018/sep/06/nhs-should-expand-social-prescribing-says-health-secretary.

Carson, S. H. and Langer, E. J. (2006). Mindfulness and self-acceptance. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 24(1):29–43.

Cash, M. and Whittingham, K. (2010). What Facets of Mindfulness Contribute to Psychological Well-being and Depressive, Anxious, and Stress-related Symptomatology? *Mindfulness*, 1(3):177–182.

Cassidy, G. and Macdonald, R. A. R. (2007). The effect of background music and background noise on the task performance of introverts and extraverts. *Psychology of Music*, 35(3):517–537.

Cater, J. K. (2011). SKYPE - A cost-effective method for qualitative research. *Rehabilitation Counselors and Educators Journal*, 4(2):2–5.

Chafe, W. (1995). Adequacy, user-friendliness, and practicality in transcribing. In Leech, G., Myers, G., and Thomas, J., editors, *Spoken English on Computer: Transcription, Mark-up and Application*, pages 54–61. Longman, Harlow.

Chamorro-Premuzic, T. and Furnham, A. (2007). Personality and music: Can traits explain how people use music in everyday life? *British Journal of Psychology*, 98(2):175–185.

Chamorro-Premuzic, T., Goma-i Freixanet, M., Furnham, A., and Muro, A. (2009). Personality, self-estimated intelligence, and uses of music: A Spanish replication and extension using structural equation modeling. *Psychology of Aesthetics, Creativity, and the Arts*, 3:149–155.

Chan, M. F., Wong, Z. Y., and Thayala, N. V. (2011). The effectiveness of music listening in reducing depressive symptoms in adults: A systematic review. *Complementary Therapies in Medicine*, 19:332–348.

Chanda, M. L. and Levitin, D. J. (2013). The neurochemistry of music. *Trends in Cognitive Sciences*, 17(4):179–193.

Chandler, J., Mueller, P., and Paolacci, G. (2014). Nonnaïveté among Amazon Mechanical Turk workers: Consequences and solutions for behavioural researchers. *Behavioral Research Methods*, 46(1):112–130.

Chen, L., Zhou, S., and Bryant, J. (2007). Temporal changes in mood repair through music consumption: Effects of mood, mood salience, and individual differences. *Media Psychology*, 9(3):695–713.

Cheong-Clinch, C. *Musical diaries: an investigation of the everyday music engagement of young people with mental illness*. PhD thesis, University of Melbourne.

Chin, T. C. and Rickard, N. S. (2014). Emotion regulation strategy mediates both positive and negative relationships between music uses and well-being. *Psychology of Music*, 42(5):692–713.

Choiniere, D. B. (2010). The effects of hospital noise. *Nursing Administration Quarterly*, 34(4):327–333.

Cleary, M. and Walter, G. (2011). Is e-mail communication a feasible method to interview young people with mental health problems? *Journal of Child & Adolescent Psychiatric Nursing*, 24(3):150–152.

Cleland, C., Kearns, A., Tannahill, C., and Ellaway, A. (2016). The impact of life events on adult physical and mental health and well-being: Longitudinal analysis using the GoWell health and well-being survey. *BMC Research Notes*, 9(1):470–479.

Clement, J. (2019). Global digital population as of January 2019. Retrieved August 13 2019 from the Statista website: https://www.statista.com/statistics/617136/digital-population-worldwide/.

Conrad, F., Corey, J., Goldstein, S., Ostrow, J., and Sadowsky, M. (2018). Extreme re-listening: Songs people love...and continue to love. *Psychology of Music*, 47(2):1–15.

Coomber, R. (1997). Using the Internet for Survey Research. *Sociological Research Online*, 2(2).

Cooper, A. E. and Farid, H. (2016). Does the Sun revolve around the Earth? A comparison between the general public and online survey respondents in basic scientific knowledge. *Public Understanding of Science*, 25(2):146–153.

Coyle, A. and Wright, C. (1994). Using the counselling interview to collect research data on sensitive topics. *Journal of Health Psychology*, 1(4):431–440.

Creech, A., Hallam, S., Varvarigou, M., McQueen, H., and Gaunt, H. (2013). Active music making: A route to enhanced subjective well-being among older people. *Perspectives in Public Health*, 133(1):36–43.

Creswell, W. J. (2014). *Research design: Qualitative, Quantitative and Mixed Methods Approaches*. SAGE Publications, Thousand Oaks, 4th edition.

Crump, C. M. J., Crump, J., McDonnell, T., and Gureckis, S. (2013). Evaluating Amazon's Mechanical Turk as a tool for experimental behavioral research. *PLoS ONE*, 8(3).

Czaja, R. and Blair, J. (2004). *Designing surveys: A guide to decisions and procedures*. SAGE Publications, Pine Forge.

Davies, A. R., Homolova, L., Grey, C. N. B., and Bellis, M. A. (2017). Mass Unemployment Events (MUEs) – Prevention and Response from a Public Health Perspective. Technical report, Public Health Wales NHS Trust, Cardiff.

Daykin, N. (2012). Developing social models for research and practice in music, arts, and health: A case study of research in a mental health setting. In MacDonald, R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 65–75. Oxford University Press, Oxford.

de Boise, S. (2015). Music Listening, Emotions, Age and Context. In de Boise, S., editor, *Men, Masculinity, Music and Emotions*, chapter 4, pages 94–120. Palgrave Macmillan, London.

de Boise, S. (2016). Contesting 'sex' and 'gender' difference in emotions through music use in the UK. *Journal of Gender Studies*, 25(1):66–84.

de Bruin, E. I., Topper, M., Muskens, J. G. A. M., Bögels, S. M., and Kamphuis, J. H. (2012). Psychometric Properties of the Five Facets Mindfulness Questionnaire (FFMQ) in a Meditating and a Non-meditating Sample. *Assessment*, 19(2):187–197.

de la Torre-Luque, A., Caparros-Gonzalez, R. A., Bastard, T., Vico, F. J., and Buela-Casal, G. (2017). Acute stress recovery through listening to Melomics relaxing music: A randomized controlled trial. *Nordic Journal of Music Therapy*, 26(2):124–141.

de Winter, F. J. C., Kyriakidis, M., Dodou, D., and Happee, R. (2015). Using Crowdflower to study the relationship between self-reported violations and traffic accidents. *Proceedia Manufacturing*, 3:2518–2525.

Deakin, H. and Wakefield, K. (2014). Skype interviewing: reflections of two PhD researchers. *Qualitative Research*, 14(5):603–616.

DeNora, T. (2000). *Music in everyday life*. Cambridge University Press, Cambridge.

DeNora, T. (2013). *Music Asylums: Wellbeing through music in everyday life*. Ashgate Publishing Ltd., Surrey.

Dibben, N. (2017). Music as enabling: Enhancing Sport, Work, and Other Pursuits. In Ashley, R. and Timmers, R., editors, *The Routledge Companion to Music Cognition*, chapter 31, pages 377–388. Routledge, London.

Dillman Carpentier, F. J. D., Brown, M., Bertocci, M., Silk, J. S., Forbes, E. E., and Dahl, R. E. (2008). Sad Kids, Sad Media? Applying Mood Management Theory to Depressed Adolescents' Use of Media. *Media Psychology*, 11:143–166.

Dreikurs, R. (1954). The Dynamics of Music Therapy. In Bing, M., editor, *Proceedings of the National Association for Music Therapy (3rd book)*, pages 15–23, Michigan. National Association for Music Therapy.

Druckman, D. (2005). Survey research. In *Doing research: Methods of Inquiry for Conflict Analysis*, pages 135–148. SAGE Publications, Thousand Oaks.

Dutton, W. H. and Blank, G. (2013). Oxford Internet Survey 2013 Report: Cultures of the Internet. Technical report, University of Oxford.

Economic Social Research Council (2010). Framework for Research Ethics. Retrieved May 12 2017 from the ESRC website: http://www.esrc.ac.uk/files/funding/guidance-for-applicants/esrc-framework-for-research-ethics-2010/.

Economic Social Research Council (2015). Summary of 2015 revisions to the ESRC Framework for Research Ethics. Retrieved May 23 2017 from the ESRC website: http://www.esrc.ac.uk/files/funding/guidance-for-applicants/summary-of-2015-revisionsto-the-esrc-framework-for-research-ethics/.

Eerola, T., Vuoskoski, J. K., and Kautiainen, H. (2016). Being moved by unfamiliar sad music is associated with high empathy. *Frontiers in Psychology*, 7(SEP):1–12.

Eerola, T., Vuoskoski, J. K., Peltola, H. R., Putkinen, V., and Schäfer, K. (2017). An integrative review of the enjoyment of sadness associated with music. *Physics of Life Reviews*, 25:100–121.

Elliott, D. and Silverman, M. (2012). Why music matters: Philosophical and cultural foundations. In MacDonald, R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 25–39. Oxford University Press, Oxford.

Elliott, D. J. (1995). *Music Matters: A new philosophy of music education*. Oxford University Press, New York.

Els, D. A. and De La Rey, R. P. (2006). Developing a holistic wellness model. *SA Journal of Human Resource Management*, 4(2):46–56.

Elvers, P. (2016). Songs for the ego: Theorizing musical self-enhancement. *Frontiers in Psychology*, 7(2):1–11.

Elvers, P., Fischinger, T., and Steffens, J. (2017). Music listening as self-enhancement: Effects of empowering music on momentary explicit and implicit self-esteem. *Psychology of Music*, 46(3):307–325.

Elvers, P., Omigie, D., Fuhrmann, W., and Fischinger, T. (2015). Exploring the musical taste of expert listeners: musicology students reveal tendency toward omnivorous taste. *Frontiers in Psychology*, 6(August):1–11.

Engwall, M. and Duppils, S. G. (2009). Music as a nursing intervention for post-operative pain: A systematic review. *Journal of Perianaesthesia Nursing*, 24(6):370–383.

Evans, D. (2002). The effectiveness of music as an intervention for hospital patients: a systematic review. *Journal of Advanced Nursing*, 37:8–18.

Fancourt, D. (2017). *Arts in Health: Designing and researching interventions*. Oxford University Press, Oxford.

Fancourt, D., Ockelford, A., and Belai, A. (2014). The psychoneuroimmunological effects of music: A systematic review and a new model. *Brain, Behavior, and Immunity*, 36:15–26.

Finn, S. and Fancourt, D. (2018). The biological impact of listening to music in clinical and non-clinical settings: A systematic review. *Progress in Brain Research*, 237(August):173–200.

Fontana, A. and Frey, I. H. (1994). Interviewing: the art of science. In Lincoln, N. K. and Denzin, Y. H., editors, *Handbook of Qualitative Research*, pages 361–376. SAGE Publications, Thousand Oaks.

Franco, F., Swaine, J. S., Israni, S., Zaborowska, K. A., Kaloko, F., Kesavarajan, I., and Majek, J. A. (2014). Affect-matching music improves cognitive performance in adults and young children for both positive and negative emotions. *Psychology of Music*, 42(6):869–887.

French, T. L. (2014). *An investigation of the role of music for health promotion in everyday life*. PhD thesis, Glasgow Caledonian University.

Gale, N. K., Heath, G., Cameron, E., Rashid, S., and Redwood, S. (2013a). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, 13(1):117–124.

Gale, N. K., Heath, G., Cameron, E., Rashid, S., and Redwood, S. (2013b). Using the framework method for the analysis of qualitative data in multi-disciplinary health research - Supplementary material: Illustrative example of the use of the Framework Method. *BMC Medical Research Methodology*, 13(1):1–11.

Gandhi, M. (2018). Spotify Concept: Risk-free Music Exploration. Medium. Accessed 11/11/2019 at https://blog.prototypr.io/spotify-concept-risk-free-music-exploration-f5c7fa85bfa6.

Garbett, D. and Ovens, A., editors (2017). *Being Self-Study Researchers in a Digital World: Future oriented research and pedagogy in Teacher Education*. Springer International Publishing, Switzerland.

Garofalo, R. (2010). Politics, Mediation, Social Context, and Public Use. In Juslin, P, N., editor, *Handbook of Music and Emotion: Theory, Research, Applications*, chapter 26, pages 1–48. Oxford University Press, Oxford.

Garrido, S., Eerola, T., and McFerran, K. (2017). Group rumination: Social interactions around music in people with depression. *Frontiers in Psychology*, 8(MAR):1–10.

Garrido, S. and Schubert, E. (2011). Individual differences in the enjoyment of negative emotion in music: a literature review and experiment. *Music Perception: An Interdisciplinary Journal*, 28(3):276–296.

Garrido, S. and Schubert, E. (2013). Adaptive and maladaptive attraction to negative emotions in music. *Musicae Scientiae*, 17(2):147–166.

Garrido, S. and Schubert, E. (2015a). Moody melodies: Do they cheer us up? A study of the effect of sad music on mood. *Psychology of Music*, 43(2):244–261.

Garrido, S. and Schubert, E. (2015b). Music and people with tendencies to depression. *Music Perception*, 32(4):313–21.

Gebhardt, S., Kunkel, M., and von Georgi, R. (2014). Emotion modulation in psychiatric patients through music. *Music Perception*, 31(5):485–493.

Gebhardt, S. and Von Georgi, R. (2007). Music, mental disorder and emotional reception behavior. *Music Therapy Today*, 8(3):419–445.

Gebhardt, S. and von Georgi, R. (2015). The change of music preferences following the onset of a mental disorder. *Mental Illness*, 7(1):21–25.

Getz, L. M., Chamorro-Premuzic, T., Roy, M. M., and Devroop, K. (2012). The relationship between affect, uses of music, and music preferences in a sample of South African adolescents. *Psychology of Music*, 40(2):164–178.

Giddens, A. (1991). *Modernity and self identity*. Policy Press, Cambridge.

Gilbert, P. and Procter, S. (2006). Compassionate Mind Training for People with High Shame and Self-Criticism: Overview and Pilot Study of a Group Therapy Approach. *Clinical Psychology & Psychotherapy*, 13:353–379.

Goines, L. and Hagler, L. (2007). Noise pollution: a modern plague. *Southern Medical Journal*, 100(3):287–294.

Goldberg, A. R. (2014). *Preferred music-based mindfulness: A new intervention for stress reduction*. PhD thesis, Sofia University.

Gosling, D. S., Vazier, S., Srivastava, S., and John, P. O. (2004). Should we trust web-based studies? A comparative analysis of six preconceptions about internet questionnaires. *American Psychologist*, 59:93–104.

Greasley, A. E. and Lamont, A. M. (2006). Music preferences in adulthood: Why do we like the music we do? In Baroni, M., Addess, A. R., Caterina, R., and Costa, M., editors, *Proceedings of the 9th International Conference on Music Perception & Cognition (ICNPC9)*, page 960, Bologna/Italy. The Society for Music Perception and Cognition (SMPC) and European Society for the Cognitive Sciences of music (ESCOM).

Greasley, A. E. and Lamont, A. M. (2011). Exploring engagement with music in everyday life using experience sampling methodology. *Musicae Scientiae*, 15(1):45–71.

Greb, F., Schlotz, W., and Steffens, J. (2017). Personal and situational influences on the functions of music listening. *Psychology of Music*, 46(6):763–794.

Greb, F., Steffens, J., and Schlotz, W. (2018). Understanding music-selection behavior via statistical learning: Using the percentile-Lasso to identify the most important factors. *Music and Science*, 1:1–17.

Greenberg, D. M., Baron-Cohen, D., Stillwell, D. J., Kosinski, M., and Rentfrow, P. J. (2015). Musical Preferences are Linked to Cognitive Styles. *PLoS ONE*, 10(7):e0131151.

Greenlaw, C. and Brown-Welty, S. (2009). A comparison of web-based and paper-based survey methods: Testing assumptions of survey mode and response cost. *Evaluation Review*, 33(5):464–480.

Greenwood, D. N. and Long, C. R. (2009). Psychological predictors of media involvement: Solitude experiences and the need to belong. *Communication Research*, 36(5):637–654.

Griefahn, B. and Robens, S. (2010). Experimental studies on the effects of nocturnal noise on cortisol awakening response. *Noise Health*, 12(47):129–136.

Groarke, J. M. (2017). *The adaptive functions of music listening: structure, correlates, and consequences*. PhD thesis, National University of Ireland.

Groarke, J. M. and Hogan, M. J. (2016). Enhancing wellbeing: An emerging model of the adaptive functions of music listening. *Psychology of Music*, 44(4):769–791.

Groarke, J. M. and Hogan, M. J. (2018). Development and psychometric evaluation of the adaptive functions of music listening scale. *Frontiers in Psychology*, 9(APR):1–19.

Groarke, J. M. and Hogan, M. J. (2019). Listening to self-chosen music regulates induced negative affect for both younger and older adults. *PloS ONE*, 14(6):1–19.

Gross, J. J. and Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In Gross, J. J., editor, *Handbook of emotion regulation*, pages 3–26. Guilford, New York, NY.

Haake, A. B. (2011). Individual music listening in workplace settings: An exploratory survey of offices in the UK. *Musicae Scientiae*, 15(1):107–129.

Hagerman, I., Rasmanis, G., Blomkvist, V., Ulrich, R., Anne, E. C., and Theorell, T. (2005). Influence of intensive coronary care acoustics on the quality of care and physiological state of patients. *International Journal of Cardiology*, 98(2):26–27.

Hanna, P. (2012). Using internet technologies (such as Skype) as a research medium: A research note. *Qualitative Research*, 12(2):239–242.

Hanser, W. E., Ter Bogt, T. F. M., Van den Tol, A., Mark, R. E., and Vingerhoets, A. J. J. M. (2016). Consolation through music: A survey study. *Musicae Scientiae*, 20(1):122–137.

Hargreaves, D. J. (2012). Musical imagination: Perception and production, beauty and creativity. *Psychology of Music*, 40(5):539–557.

Hearon, L. (2017). Spotify is quietly testing a new feature to make your Discover Weekly playlist even smarter. Retrieved on November 10 2019 from the Mashable website: https://mashable.com/2017/12/04/spotify-discover-weekly-like-dislike-test/?europe=true.

Helsing, M. (2012). Everyday music listening: The importance of individual and situational factors for musical emotions and stress reduction. In Cambouropoulos, E., Tsougras, C., Mavromatis, P., and Pastiadis, K., editors, *Proceedings of the 12th International Conference on Music Perception and Cognition (ICMPC)/8th Triennial Conference of the European Society for the Cognitive Sciences of Music (ESCOM)*, pages 414–418, Thessaloniki, Greece.

Henrich, J., Heine, S. J., and Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 33(2-3):61–135.

Hense, C., McFerran, K. S., and McGorry, P. (2014). Constructing a grounded theory of young people's recovery of musical identity in mental illness. *Arts in Psychotherapy*, 41:594–603.

Hense, C., Silverman, M. J., and McFerran, K. S. (2018). Using the healthy-unhealthy uses of music scale as a single-session music therapy intervention on an acute youth mental health inpatient unit. *Music Therapy Perspectives*, 36(2):152–160.

Herbert, R. (2012). Conceptualizing the Subjective Experience of Listening to Music in Everyday Life. In Cambouropoulos, E., Tsougras, C., Mavromatis, P., and K., P., editors, *Proceedings of the 12th International Conference on Music Perception and Cognition (ICMPC)/8th Triennial Conference of the European Society for the Cognitive Sciences of Music (ESCOM)*, pages 421–422, Thessaloniki, Greece.

Hewson, C. (2014). Methods: Conducting research on the internet - a new era. *The psychologist*, 27(12):946–950.

Heye, A. and Lamont, A. L. (2010). Mobile listening situations in everyday life: The use of MP3 players while travelling. *Musicae Scientiae*, 14(1):95–120.

Hindriks, F., Douven, I., and Singmann, H. (2016). A new angle on the Knobe Effect: Intentionality correlates with blame, not with praise. *Mind and Language*, 31(2):204–220.

Hinterberger, T., Auer, J., Schmidt, S., and Loew, T. (2013). Evaluation of a salutogenetic concept for inpatient psychosomatic treatment. *Evidence-based Complementary and Alternative Medicine*, 2013:735–731.

Hole, J., Hirsch, M., Ball, E., and Meads, C. (2015). Music as an aid for postoperative recovery in adults: a systematic review and meta-analysis. *The Lancet*, 386:1659–1671.

Howe, R. K. (2002). *Closing Methodological Divides: Toward Democratic Educational Research*, volume 11. Kluwer Academic Publishers, Dordrect.

Howlin, C., Lynch, D., Guerin, S., and Rooney, B. (2018). Music in the body: Does music listening influence the reality of pain? A scoping review. In Parncutt, R. and Sattmann, S., editors, *Proceedings of the International Conference on Music Perception and Cognition (ICMPC) 15/European Society for the Cognitive Sciences of Music (ESCOM)10*, Graz, Austria.

Huang, S. T., Good, M., and Zauszniewski, J. A. (2010). The effectiveness of music in relieving pain in cancer patients: a randomized controlled trial. *International Journal of Nursing Studies*, 47(11):1354–1362.

Hughes, J. (2012). Ethics in Online Research: Evaluating the ESRC Framework for Research Ethics: Categorisation of Risk. In *SAGE Internet Research Methods*, pages 305–315. SAGE Publications, London.

Huron, D. (2011). Why is sad music pleasurable? A possible role for prolactin. *Musicae Scientiae*, 15:146– 158.

Hutchison, S. L., Baldwin, C. K., and Oh, S. S. (2006). Adolescent coping: Exploring adolescent's leisure-based responses to stress. *Leisure Sciences: An Interdisciplinary Journal*, 28:115–131.

IFPI (2019). IFPI Global Music Report 2019. The State of the Industry. Retrieved February 2 2020 from the IFPI website: https://www.ifpi.org/wp-content/uploads/2020/07/Global_Music_Report-the_Industry_in_2019-en.pdf.

Illingworth, N. (2001). The Internet Matters: Exploring the Use of the Internet as a Research Tool. *Sociological Research Online*, 6(2).

Iyendo, T. O. (2016). Exploring the effect of sound and music on health in hospital settings: A narrative review. *International Journal of Nursing Studies*, 63:82–100.

Janghorban, R., Roudsari, R. L., and Taghipour, A. (2014). Skype interviewing: The new generation of online synchronous interview in qualitative research. *International Journal of Qualitative Studies on Health and Well-being*, 9(1):9–11.

Jeffries, K. J., Fritz, J. B., and Braun, A. R. (2003). Words in melody: An H215O PET study of brain activation during singing and speaking. *Neuroreport*, 14(5):749–754.

Johnson, B. R., Onwuegbuzie, J. A., and Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1:112–133.

Juslin, P. N. and Laukka, P. (2004). Expression, Perception, and Induction of Musical Emotions: A Review and a Questionnaire Study of Everyday Listening. *Journal of New Music Research*, 33(3):217–238.

Juslin, P. N. and Västfjäll, D. (2008). Emotional responses to music: The need to consider underlying mechanisms. *Behavioral and Brain Sciences*, 31(5):559–621.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10(2):144–156.

Kang, R., Brown, S., Dabbish, L., and Kiesler, S. (2014). Privacy attitudes of Mechanical Turk workers and the U.S. public. In *Proceedings of the 10th Symposium in Usable Privacy and Security*. USENIX Association.

Kassabian, A. (2013). *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity*. University of California Press, Berkeley.

Kennaway, J. (2012). *Bad Vibrations: The history of the idea of music as a cause of disease*. Routledge, New York, NY.

Killelea, E. (2017). 'Take Two Songs and Call Me in the Morning': How Music Might Be Your Next Prescription Drug. Retrieved December 11 2019 from the Outside Online website: https://www.outsideonline.com/2190406/take-two-songs-and-call-me-morning-how-music-might-be.

Kistler, M., Rodgers, K. B., Power, T., Austin, E. W., and Hill, L. G. (2010). Adolescents and music media: Toward an involvement-mediational model of consumption and self-concept. *Journal of Research on Adolescence*, 20:616–630.

Klassen, J. A., Liang, Y., Tjosvold, L., Klassen, T. P., and Hartling, L. (2008). Music for Pain and Anxiety in Children Undergoing Medical Procedures: A Systematic Review of Randomized Controlled Trials. *Ambulatory Pediatrics*, 8:117–128.

Knobloch, S. (2003). Mood adjustment via mass communication. *Journal of Communication*, 53(2):233–250.

Knobloch, S. and Mundorf, N. (2003). Communication and emotion in the context of music and music television. In Bryant, J., Roskos-Ewoldsen, J. R., and Cantor, J., editors, *Communication and emotion: Essays in honor of Dolf Zillmann*, pages 491–509. Lawrence Erlbaum, Mahwah, NJ.

Knobloch, S. and Zillmann, D. (2002). Mood management via the digital jukebox. *Journal of Communication*, 52(2):351–366.

Koptyug, E. (2019). Number of estimated Skype users registered worldwide from 2009 to 2024. Retrieved February 21 2019 from the Statista website: https://www.statista.com/statistics/820384/estimated-number-skype-users-worldwide/.

Kowal, S. and O'Connell, D. C. (2014). *Transcription as a Crucial Step of Data Analysis*. SAGE Publications, Inc., London, UK.

Krause, A. E. and Hargreaves, D. J. (2012). MyTunes: Digital music library users and their self-images. *Psychology of Music*, 41(5):531–544.

Krause, A. E. and North, A. C. (2014a). Contextualised music listening: playlists and the Mehrabian and Russell model. *Psychology of Well-being: Theory, Research and Practice*, 4(22).

Krause, A. E. and North, A. C. (2014b). Music listening in everyday life: Devices, selection methods, and digital technology. *Psychology of Music*.

Krause, A. E. and North, A. C. (2015). How location and user control influence listeners' responses. In Ginsborg, J., Lamont, A., Phillips, M., and Bramley, S., editors, *Proceedings of the 9th Triennial Conference of the European Society for the Cognitive Sciences of Music (ESCOM)*, pages 2–3, Manchester, UK.

Krause, A. E. and North, A. C. (2018). 'Tis the Season: Music-Playlist Preferences for the Seasons. *Psychology of Aesthetics, Creativity, and the Arts*, 12(2):89–95.

Krause, A. E., North, A. C., and Davidson, J. (2019). Using Self-Determination Theory to Examine Musical Participation and Well-Being. *Frontiers in Psychology*, 10.

Krause, A. E., North, A. C., and Hewitt, L. Y. (2014a). Music Selection Behaviors in Everyday Listening. *Journal of Broadcasting & Electronic Media*, 58(2):306–323.

Krause, A. E., North, A. C., and Hewitt, L. Y. (2014b). The role of location in everyday experiences of music. *Psychology of Popular Media Culture*, 5(3).

Krause, A. E., North, A. C., and Hewitt, L. Y. (2015). Music-listening in everyday life: Devices and choice. *Psychology of Music*, 43(2):155–170.

Kreutz, G., Schubert, E., and Mitchell, L. A. (2008). Cognitive styles of music listening. *Music Perception*, 26(1):57–73.

Krout, R. E. (2007). Music listening to facilitate relaxation and promote wellness: Integrated aspects of our neurophysiological responses to music. *The Arts in Psychotherapy*, 34:134–141.

Kuntsche, E., Le Mevel, L., and Berson, I. (2016). Development of the four-dimensional Motives for Listening to Music Questionnaire (MLMQ) and associations with health and social issues among adolescents. *Psychology of Music*, 44(2):219–233.

Kusek, D. and Leonhard, G. (2005). *The future of music: Manifesto for the digital music revolution*. Berklee Press, Boston, MA.

Kvale, S. (1995). *Interviews: An introduction to qualitative research interviewing*. SAGE Publications, Thousand Oaks.

Lacey, A. and Luff, D. (2007). Qualitative data analysis. Retrieved October 12 2017 from the NIHR website: https://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/9_Qualitative_Data_Analysis_Revision_2009.pdf.

Lacourse, E., Claes, M., and Villeneuve, M. (2001). Heavy metal music and adolescent suicidal risk. *Journal of Youth and Adolescence*, 30:321–332.

Laing, R. D. (1969). *The Divided Self*. Tavistock, London.

Lamont, A. L. (2017). Music Alone and with Others: Listening, Sharing and Celebrating. In Ashley, R. and Timmers, R., editors, *The Routledge Companion to Music Cognition*, chapter 27, pages 325–336. Routledge, London.

Langdridge, D. and Hagger-Johnson, G. (2009). *Introduction to research methods and data analysis in psychology*. Pearson Education Limited, Essex, 2nd edition.

Laukka, P. (2007). Uses of music and psychological well-being among the elderly. *Journal of Happiness Studies*, 8:215–241.

Laukka, P., Eerola, T., Thingujam, N. S., Yamasaki, T., and Beller, G. (2013). Universal and culture-specific factors in the recognition and performance of musical affect expressions. *Emotion*, 13(3):434–449.

Laukka, P. and Quick, L. (2013). Emotional and motivational uses of music in sports and exercise: A questionnaire study among athletes. *Psychology of Music*, 41(2):198–215.

Lavrakas, J. P., editor (2008). *Encyclopedia of survey research methods Vol. 2*. SAGE Publications, London.

Lee, C., Lee, C., Hsu, M., Lai, C., Sung, Y., Lin, C., and Lin, L. (2017). Effects of Music Intervention on State Anxiety and Physiological Indices in Patients Undergoing Mechanical Ventilation in the Intensive Care Unit. *Biological Research For Nursing*, 19:137–144.

Lee, J. H. (2016). The effects of music on pain: A meta-analysis. *Journal of Music Therapy*, 53(4):430–477.

Leventhal, H. and Patrick-Miller, L. (2000). Emotions and physical illness: Causes and indicators of vulnerability. In Lewis, M. and Haviland-Jones, J. M., editors, *Handbook of emotions*, pages 645–60. Guilford Press, New York, 2nd edition.

Lippman, J. R. and Greenwood, D. N. (2012). A Song to Remember: Emerging Adults Recall Memorable Music. *Journal of Adolescent Research*, 27(6):751–774.

Liu, E. H. C. and Tan, S. (2000). Patients' perception of sound levels in the surgical suite. *Journal of Clinical Anesthesia*, 12(4):298–302.

Lo Iacono, V., Symonds, P., and Brown, D. H. K. (2016). Skype as a tool for qualitative research interviews. *Sociological Research Online*, 21(2).

Locker, M. (2019). Bad music at Starbucks: When does it become a workers' rights issue? Retrieved November 11 2019 from the Fast Company website: https://www.fastcompany.com/90312315/bad-music-at-starbucks-when-does-it-become-a-workers-rights-issue.

Lonsdale, A. J. and North, A. C. (2011). Why do We Listen to Music? A Uses and Gratifications Analysis. *British Journal of Psychology*, 102:108–134.

Loveday, C. (2017). Why the music we love as teenagers stays with us for life. Retrieved January 22 2020 from the BBC website:

https://www.bbc.co.uk/programmes/articles/WYbJdPrX3qn17F1YYK36sS/why-the-music-we-love-as-teens-stays-with-us-for-life.

Lygidakis, C., Rigon, S., Cambiaso, S., Bottoli, E., Cuozzo, F., Bonetti, S., Della Bella, C., and Marzo, C. (2010). A web-based versus paper questionnaire on alcohol and tobacco in adolescents. *Telemedicine Journal and E-Health*, 16(9):925–930.

Lynch, J. and Wilson, C. E. (2018). Exploring the impact of choral singing on mindfulness. *Psychology of Music*, 46(6):848–861.

Macdonald, R. A. R. (2013). Music, health, and well-being: A review. *International Journal of Qualitative Studies on Health and Wellbeing*, 8:1–13.

MacDonald, R. A. R., Hargreaves, D. J., and Miell, D., editors (2002). *Musical Identities*. Oxford University Press, Oxford.

MacDonald, R. A. R. and Knox, D. (2016). The Role of Technology in Music Listening For Health and Wellbeing. *Journal of Biomusical Engineering*, 3(1).

MacDonald, R. A. R., Kreutz, G., and Mitchell, L. (2012a). *Music, Health and Wellbeing*. Oxford University Press, Oxford.

MacDonald, R. A. R., Kreutz, G., and Mitchell, L. (2012b). What is Music, Health and Wellbeing and why is it important? In MacDonald, R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 3–11. Oxford University Press, Oxford.

Mackrill, J., Cain, R., Jennings, P., and England, M. (2013). Sound source information to improve cardiothoracic patients' comfort. *British Journal of Nursing*, 22(7):387–393.

Mainka, S., Spingte, R., and Thaut, M. (2016). Music Therapy in medical and neurological rehabilitation settings. In Hallam, S., Cross, I., and Thaut, M., editors, *Oxford Handbook of Music Psychology*, pages 857–873. Oxford University Press, Oxford, 2nd edition.

Maloney, L. (2017). Music As Water: The Functions of Music from a Utilitarian Perspective. *AVANT. Trends in Interdisciplinary Studies*, 8:57–67.

Maloney, L. (2018). Reconceptualising the Functions of Listening in Everyday Life: A Domain-Based Aggregate Thematic Framework and Comparative ESM Study. In *Proceedings of the International Conference on Music Perception and Cognition (ICMPC) 15/European Society for the Cognitive Sciences of Music (ESCOM)10*, number July, pages 267–271, Graz, Austria.

Marelli, M., Dinu, G., Zamparelli, R., and Baroni, M. (2014). Picking buttercups and eating butter cups: Spelling alternations, semantic relatedness and their consequences for compund processing. *Applied Psycholinguistics*, 36:1421–1439.

Marreiros, H., Tonin, M., Vlassopoulos, M., and Schraefel, M. C. (2017). "Now that you mention it": A survey experiment on information, inattention and online privacy. *Journal of Economic Behavior & Organization*, 140:1–17.

Marshall, L. (2019). Do People Value Recorded Music? *Cultural Sociology*, 13(2):141–158.

Mason, D. M. and Ide, B. (2014). Adapting qualitative research strategies to technology savvy adolescents. *Nurse Researcher*, 21(5):40–45.

Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research*, 6(1):9–25.

Mason, W. and Suri, S. (2012). Conducting behavioral research on Amazon's Mechanical Turk. *Behavioral Research Methods*, 44.

Maxwell, A. J. and Mitapalli, K. (2010). Realism as a stance for mixed methods research. In A, T. and B, T. C., editors, *Handbook of mixed methods in social and behavioral research*. SAGE Publications, Thousand Oaks, 2nd edition.

Mayer, J. and Thiel, A. (2014). Health in elite sports from a salutogenetic perspective: Athletes' sense of coherence. *PLoS ONE*, 9(7):1–11.

McFerran, K. S. (2010a). *Adolescents, Music and Music Therapy: Methods and Techniques for Clinicians, Educators, and Students*. Jessica Kingsley Publications, London.

McFerran, K. S. (2010b). Tipping the scales: A substantive theory on the value of group music therapy for supporting grieving teenagers. *Qualitative Inquiries in Music Therapy*, 5(1):1–42.

McFerran, K. S. (2016). Contextualising the relationship between music, emotions and the well-being of young people: A critical interpretive synthesis. *Musicae Scientiae*, 20(1):103–121.

McFerran, K. S. and Baird, K. (2013). Is Music Really My Best Friend? Reflections of Two Maturing Women on One's Relationship With Music. *Musical Life Stories: Narratives on Health Musicking*, 5:117–138.

McFerran, K. S., Garrido, S., O'Grady, L., Grocke, D., and Sawyer, S. M. (2015). Examining the relationship between self-reported mood management and music preferences of Australian teenagers. *Nordic Journal of Music Therapy*, 24(3):187–203.

McFerran, K. S., Garrido, S., and Saarikallio, S. (2016). A Critical Interpretive Synthesis of the Literature Linking Music and Adolescent Mental Health. *Youth and Society*, 48(4):521–538.

McFerran, K. S. and Hense, C. (2017). "I would die without my music": Relying on musical identities to cope with difficult times. In MacDonald, R. A. R., Hargreaves, D. J., and Miell, D., editors, *Handbook of Musical Identities*, chapter 36, pages 668–681. Oxford University Press, Oxford, 1st edition.

McFerran, K. S. and Saarikallio, S. (2014). Depending on music to feel better: Being conscious of responsibility when appropriating the power of music. *Arts in Psychotherapy*, 41(1):89–97.

Mehl, M. R. and Conner, T. S., editors (2013). *Handbook of Research Methods for Studying Daily Life*. Guilford Press.

Melamed, S. and Bruhis, S. (1996). The effects of chronic industrial noise exposure on urinary cortisol, fatigue, and irritability: a controlled field experiment. *Journal of Occupational Environmental Medicine*, 38(3):252–256.

Meltzoff, J. (2010). *Critical thinking about research: Psychology and related fields*. American Psychological Association, USA, 11th edition.

Merriam, A. P. (1964). *The Anthropology of Music*. Northwestern University Press, Evanston, IL.

Miranda, D. (2013). The role of music in adolescent development: Much more than the same old song. *International Journal of Adolescence and Youth*, 18(1):5–22.

Miranda, D. and Claes, M. (2009). Music listening, coping, peer affiliation and depression in adolescence. *Psychology of Music*, 37(2):215–233.

Miranda, D. and Gaudreau, P. (2011). Music listening and emotional wellbeing in adolescence: A person- and variable-oriented study. *European Review of Applied Psychology*, 61:1–11.

Mitchell, H. F. and MacDonald, R. A. R. (2011). Remembering, recognising, and describing singers' sound identities. *Journal of New Music Research*, 40(1):75–80.

Mitchell, L. A., MacDonald, R. A. R., Knussen, C., and Serpell, M. G. (2007). A survey investigation of the effects of music listening on chronic pain. *Psychology of Music*, 35(1):37–57.

Mittelmark, M. B., Sagy, S., Eriksson, M., Bauer, G. F., Pelikan, J. M., Lindström, B., and Espnes, G. A., editors (2017). *The Handbook of Salutogenesis*. Springer International Publishing.

Moore, K. S. (2017). Understanding the Influence of Music on Emotions: A Historical Review. *Music Therapy Perspectives*, 35(December):131–143.

Morrison, C. D. (2009). Music Listening as Music Making. *The Journal of Aesthetic Education*, 43(1):77–91.

Morrison, W. E., Haas, E. C., Shaffner, D. H., Garrett, E. S., and Fackler, J. C. (2003). Noise, stress, and annoyance in a pediatric intensive care unit. *Critical Care Medicine*, 31(1):113–119.

Mulligan, M. (2017). Gen Z: Meet the new millennials. Technical report, BPI and ERA/MIDiA Research, London.

Nguyen, D., Trieschnigg, D., and Theune, M. (2014). Using Crowdsourcing to investigate perception of narrative similarity. In *Proceedings of the 23rd ACM International Conference on Information and Knowledge Management*, pages 321–330.

Nilsson, U. (2008). The Anxiety- and Pain-Reducing Effects of Music Interventions: A Systematic Review. *AORN Journal*, 87(4).

North, A. C. (2010). Individual differences in musical taste. *The American Journal of Psychology*, 123(2):199–208.

North, A. C. and Hargreaves, D. J. (1996). Situational influences on reported musical preference. *Psychomusicology*, 15(3):30–45.

North, A. C. and Hargreaves, D. J. (1999a). Music and adolescent identity. *Music Education Research*, 1:75–92.

North, A. C. and Hargreaves, D. J. (1999b). The functions of music in everyday life: Redefining the social in music psychology. *Psychology of Music*, 27(1):71–83.

North, A. C. and Hargreaves, D. J. (2007a). Lifestyle correlates of musical preference: 1. Relationships, living arrangements, beliefs, and crime. *Psychology of Music*, 35:58–87.

North, A. C. and Hargreaves, D. J. (2007b). Lifestyle correlates of musical preference: 2. Media, leisure time, and music. *Psychology of Music*, 35:179–200.

North, A. C. and Hargreaves, D. J. (2007c). Lifestyle correlates of musical preference: 3. Travel, money, education, employment, and health. *Psychology of Music*, 35:473–97.

North, A. C. and Hargreaves, D. J. (2008). *The social and applied psychology of music*. Oxford University Press, Oxford.

North, A. C., Hargreaves, D. J., and Hargreaves, J. J. (2004). Uses of Music in Everyday Life. *Music Perception: An Interdisciplinary Journal*, 22(1):41–77.

O' Leary, Z. (2004). *The essential guid to doing research*. SAGE Publications, London.

Oakland, J. (2010). *'Giving Voice': Exploring Enforced Occupational Change in Opera Choristers*. PhD thesis, Glasgow Caledonian University.

Office of National Statistics (2012). Measuring National Well-being - What we do. Technical report.

Omigie, D. (2015). Dopamine and epistemic curiosity in music listening. *Cognitive Neuroscience*, 6(4):222–224.

Oprea, C. and Stan, A. (2012). Mothers of autistic children: how do they feel? *Procedia - Social and Behavioral Sciences*, 46:4191–4194.

Over, D. E., Douven, I., and Verbrugge, S. (2013). Scope ambiguities and conditionals. *Thinking and Reasoning*, 19(3):284–307.

Packer, J. and Ballantyne, J. (2010). The impact of music festival attendance on young people's psychological and social well-being. *Psychology of Music*, 39(2):164–181.

Paolacci, G., Chandler, J., and Ipeirotis, P. (2010). Running experiments on Amazon Mechanical Turk. *Judgement and Decision Making*, 5(5):411–419.

Papinczak, Z. E., Dingle, G. A., Stoyanov, S. R., Hides, L., and Zelenko, O. (2015). Young people's uses of music for well-being. *Journal of Youth Studies*, 18(9):1119–1134.

Pareles, J. (2002). David bowie, 21st-century entrepreneur. Retrieved August 29 2019 from the New York Times website: https://www.nytimes.com/2002/06/09/arts/david-bowie-21st-century-entrepreneur.html.

Park, H. (2009). Effects of music on pain for home-dwelling persons with Dementia. *Pain Management Nursing*, 11.

Parkinson, S., Eatough, V., Holmes, J., Stapley, E., and Midgley, N. (2016). Framework analysis: a worked example of a study exploring young people's experiences of depression. *Qualitative Research in Psychology*, 13(2):109–129.

Passman, J. (2016). The world's most relaxing song. Retrieved December 12 2019 from the Forbes website: https://www.forbes.com/sites/jordanpassman/2016/11/23/the-worlds-most-relaxing-song/#74a983422053.

Pavlicevic, M. and Impey, A. (2013). Deep listening: Towards an imaginative reframing of health and well-being practices in international development. *Arts and Health: An International Journal for Research, Policy and Practice*, 5(3):238–252.

Peer, E., Samat, S., Brandimarte, L., and Acquisti, A. (2016). Beyond the Turk: Comparing crowdsourcing sites. Retrieved 22 February 2016 from the Open Science Framework website: https://osf.io/murdt/.

Pelletier, C. L. (2004). The Effect of Music on Decreasing Arousal Due to Stress: A Meta-Analysis. *Journal of Music Therapy*, 41(3):192–214.

Pepper, V. G. and Nettle, D. (2014). Out of control mortality matters: The effect of perceived uncontrollable mortality risk on a health-related decision. *PeerJ*, e459.

Pettijohn, T. F. I. (2009). Tough times, meaningful music, mature performers: popular Billboard songs and performer preferences across social and economic conditions in the USA. *Psychology of Music*, 37(2):155–179.

Pettijohn, T. F. I. and Sacco, D. F. J. (2009). The language of lyrics: an analysis of popular Billboard songs across conditions of social and economic threat. *Journal of Language and Social Psychology*, 28:297–311.

Pettijohn, T. F. I., Williams, G. M., and Carter, T. C. (2010). Music for the Seasons: Seasonal Music Preferences in College Students. *Current Psychology*, 29(4):328–345.

Philips, P. D. and Burbules, C. N. (2000). *Post-positivism and Educational Research.* Rowman and Littlefield Publishers, USA.

Pinker, S. (1997). *How the mind works.* W. W. Norton, New York, NY.

Pope, C., Ziebland, S., and Mays, N. (2000). Qualitative research in healthcare: Analysing qualitative data. *British Medical Journal*, 320(7227):114–116.

Pothoulaki, M. (2006). *The psychological effects of music in patients with chronic illness.* Doctoral thesis., Glasgow Caledonian University.

Pothoulaki, M., Macdonald, R. A. R., and Flowers, P. (2012). The use of music in chronic illness: Evidence and arguments. In Macdonald, R. A. R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, chapter 18, pages 239–256. Oxford University Press, Oxford.

Ramirez, J. M., Alvarado, J. M., and Santisteban, C. (2004). Individual differences in anger reaction to noise. *Individual Differences Research*, 2(2):125–136.

Rana, S. A. and North, A. C. (2007). The role of music in everyday life among Pakistanis. *Music Perception*, 25(1):59–73.

Randall, W. M. and Rickard, N. S. (2013). Development and trial of a mobile experience sampling method (M-Esm) for personal music listening. *Music Perception*, 31(2):157–170.

Randall, W. M. and Rickard, N. S. (2016). Reasons for personal music listening: A mobile experience sampling study of emotional outcomes. *Psychology of Music*, 45(4):479–495.

Randall, W. M., Rickard, N. S., and Vella-Brodrick, D. A. (2014). Emotional outcomes of regulation strategies used during personal music listening: A mobile experience sampling study. *Musicae Scientiae*, 18(3):275–291.

Reichardt, S. C. and Rallis, F. S. (1994). Qualitative and quantitative inquiries are not incompatible: A call for a new partnership. In *The qualitative-quantitative debate: New perspectives*, pages 85–92. Jossey-Bass, San Franscisco.

Rentfrow, P. J. (2012). The Role of Music in Everyday Life: Current Directions in the Social Psychology of Music. *Social and Personality Psychology Compass*, 6(5):402–416.

Rentfrow, P. J. and Gosling, S. D. (2003). The Do Re Mi's of Everyday Life: The Structure and Personality Correlates of Music Preferences. *Journal of Personality and Social Psychology*, 84(6):1236–1256.

Ritchie, J. and Spencer, L. (1994). Qualitative data analysis for applied policy research. In Bryman, A. and Burgess, R. G., editors, *Analyzing qualitative data*, pages 173–194. Routledge, New York.

Ritchie, J., Spencer, L., and O'Connor, W. (2003). Carrying out Qualitative Analysis. In Ritchie, J. and Lewis, J., editors, *Qualitative research practice: A Guide for Social Science Students and Researchers*, chapter 9, pages 219–262. SAGE Publications, Inc., London.

Robson, C. and McCartan, K., editors (2016). *Real world research*. Wiley, Hoboken, 4th edition.

Russell, C., Boggs, D., Palmer, J., and Rosenberg, L. (2010). Use of a Web-based questionnaire in the Black Women's Health Study. *American Journal of Epidemiology*, 172(11):128–1291.

Ruud, E. (2002). Music as a cultural immunogen – three narratives on the use of music as a technology of health. In Hanken, I., Nielsen, S. G., and Nerland, M., editors, *Research in and for Higher Music Education*, pages 109–20. NMH Publications, Oslo.

Ruud, E. (2006). The Role of Music in the Development of Identity. In Stålhammar, B., editor, *Music and Human Beings*, pages 59–69. Örebro: Universitetsbiblioteket.

Ruud, E. (2008). Music in therapy: Increasing possibilities for action. *Music and Arts in Action*, 1(1):46–60.

Ruud, E. (2010). *Music Therapy - A perspective from the humanities*. Barcelona Publishers, Gilsum, NH.

Ruud, E. (2012). The new health musicians. In MacDonald, R. A. R., Kreutz, G., and

Mitchell, L., editors, *Music, Health and Wellbeing*, pages 87–98. Oxford University Press, Oxford.

Saarikallio, S. (2010). Music as emotional self-regulation throughout adulthood. *Psychology of Music*, 39(3):307–327.

Saarikallio, S. (2012). Cross-cultural approaches to music and health. In MacDonald, R. A. R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 477–490. Oxford University Press, Oxford.

Saarikallio, S. (2017). Musical Identity in Fostering Emotional Health. In MacDonald, R. A. R., Hargreaves, D. J., and Miell, D., editors, *Handbook of Musical Identities*. Oxford University Press, Oxford.

Saarikallio, S. (2019). Access-Awareness-Agency (AAA) Model of Music-Based Social-Emotional Competence (MuSEC). *Music and Science*, 2:205920431881542.

Saarikallio, S. and Erkkilä, J. (2007). The role of music in adolescents' mood regulation. *Psychology of Music*, 35:88–109.

Saarikallio, S., Gold, C., and McFerran, K. S. (2015). Development and validation of the Healthy-Unhealthy Music Scale. *Child and Adolescent Mental Health*, 20(4):210–217.

Sacks, O. (2007). *Musicophilia: Tales of Music and the Brain*. Alfred Knopf, New York.

Sakka, L. S. and Juslin, P. N. (2018). Emotion regulation with music in depressed and non-depressed individuals: Goals, strategies and mechanisms. *Music and Science*, 1:1–12.

Särkämö, T. (2017). Cognitive, emotional, and neural benefits of musical leisure activities in aging and neurological rehabilitation: A critical review. *Annals of Physical and Rehabilitation Medicine*, 61(6):414–418.

Schäfer, K. and Eerola, T. (2018). How listening to music and engagement with other media provide a sense of belonging: An exploratory study of social surrogacy. *Psychology of Music*, pages 1–20.

Schäfer, T. (2016). The goals and effects of music listening and their relationship to the strength of music preference. *PLoS ONE*, 11(3):1–15.

Schäfer, T., Fachner, J., and Smukalla, M. (2013a). Changes in the representation of space and time while listening to music. *Frontiers in Psychology*, 4:1–15.

Schäfer, T., Sedlmeier, P., Städtler, C., and Huron, D. (2013b). The psychological functions of music listening. *Frontiers in Psychology*, 4(AUG).

Schurig, E. (2017). Urban Traffic Safety While Listening to Music – Views of Listeners and Non- Listeners. In Harrison, C. P. M., editor, *Proceedings of the 10th International Conference of Students of Systematic Musicology (SysMus17)*, London, UK.

Schurig, E. (2018). It's time for a break - reasons for not listening to mobile music. In Parncutt, R. and Sattmann, S., editors, *Proceedings of the International Conference on Music Perception and Cognition (ICMPC) 15/European Society for the Cognitive*

Sciences of Music (ESCOM)10, pages 23–28, Graz, La Plata, Montreal, Sydney. Centre for Systematic Musicology, University of Graz.

Schwandt, T. (2007). *Dictionary of Qualitative Inquiry.* SAGE Publications, Thousand Oaks, 3rd edition.

Seitz, S. (2016). Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: a research note. *Qualitative Research*, 16(2):229–235.

Sethuraman, R., Kerin, A. R., and Cron, L. W. (2005). A field study comparing online and offline data collection methods for identifying product attribute preferences using conjoint analysis. *Journal of Business Research*, 58(58):602–610.

Shapiro, N. D., Chandler, J., and Mueller, P. (2013). Using Mechanical Turk to study clinical populations. *Clinical Psychology Science*, 1:213–220.

Shapka, J. D., Domene, J. F., Khan, S., and Yang, L. M. (2016). Online versus in-person interviews with adolescents: An exploration of data equivalence. *Computers in Human Behavior*, 58:361–367.

Sharman, L. and Dingle, G. A. (2015). Extreme Metal Music and Anger Processing. *Frontiers in Human Neuroscience*, 9(May):272–283.

Shifriss, R., Bodner, E., and Palgi, Y. (2015). When you're down and troubled: Views on the regulatory power of music. *Psychology of Music*, 43(6):793–807.

Sims, W. L. (2016). Characteristics of Preschool Children's Individual Music Listening During Free Choice Time. *Bulletin of the Council for Research in Music Education*, 149:53–63.

Skånland, M. S. (2011). Use of Mp3-Players as a Coping Resource. *Music and Arts in Action*, 3(2):15–33.

Skånland, M. S. (2013). Everyday music listening and affect regulation: The role of MP3 players. *International Journal of Qualitative Studies on Health and Well-being*, 8(May):1–10.

Sloboda, J. A. (2005). Everyday uses of music listening: A preliminary study. In Sloboda, J. A., editor, *Exploring the musical mind: Cognition, emotion, ability, function*, pages 319–331. Oxford University Press, Oxford, UK.

Sloboda, J. A. (2010). Music in everyday life: The role of emotions. In Juslin, P. N. and Sloboda, J. A., editors, *Handbook of Music and Emotion: Theory, Research, Applications*, pages 493–514. Oxford University Press, New York.

Sloboda, J. A., Lamont, A., and Greasley, A. E. (2009). Choosing to hear music: Motivation, process, and effect. In Hallam, S., Cross, I., and Thaut, M., editors, *The Oxford Handbook of Music Psychology*, pages 431–440. Oxford University Press, Oxford.

Small, C. (1998). *Musicking: The meanings of performing and listening.* Wesleyan University Press, Connecticut.

Smith, J. and Firth, J. (2011). Qualitative data analysis: the framework approach. *Nurse Researcher*, 8(2):52–62.

Smith-Stoner, T. and Weber, M. (2000). *Developing theory using emergent inquiry: a study of meaningful online learning for women.* PhD thesis, California Institute of Integral Studies, San Francisco, CA.

Snee, H. (2008). Web 2 . 0 As a Social Science Research Tool. Technical report, The British Library.

Srivastava, A. and Thomson, S. B. (2009). Framework Analysis: A qualitative methodology for applied policy research. *Journal of Administration & Governance*, 4(2):72–79.

Staricoff, R. L. (2004). Arts in health: a review of the medical literature. Research report 36. Technical report, Arts Council England, London.

Sue, M. V. and Ritter, A. L. (2007). *Conducting online surveys.* SAGE Publications, London.

Sullivan, J. R. (2012). Skype: An Appropriate Method of Data Collection for Qualitative Interviews? *The Hilltop Review*, 6(1):54–60.

Sutton, J. P. (2006). Hidden music: An exploration of silence in music and music therapy. In Deliège, I. and Wiggins, G., editors, *Musical Creativity: Multidisciplinary research in theory and practice*, chapter 6, pages 252–272. Taylor Francis, Sussex.

Tahlier, M., Miron, A. M., and Rauscher, F. H. (2013). Music choice as a sadness regulation strategy for resolved versus unresolved sad events. *Psychology of Music*, 41:729–748.

Tam, W. W., Wong, E. L., and Twinn, S. F. (2008). Effect of music on procedure time and sedation during colonoscopy: A meta-analysis. *World Journal of Gastroenterology*, 14:5336–5343.

Tarrant, M., North, A. C., and Hargreaves, D. J. (2000). English and American Adolescents' Reasons for Listening to Music. *Psychology of Music*, 28:166–173.

ter Bogt, T. F. M., Mulder, J., Raaijmakers, Q. A. Q., and Gabhainn, S. N. (2011). Moved by music: A typology of music listeners. *Psychology of Music*, 39:147–163.

Ter Bogt, T. F. M., Vieno, A., Doornwaard, S. M., Pastore, M., and Van Den Eijnden, R. J. J. M. (2016). You're not alone: Music as a source of consolation among adolescents and young adults. *Psychology of Music*, 45(2):155–171.

Thayer, R. E., Newman, J. R., and McClain, T. M. (1994). Self-regulation of Mood: Strategies for Changing a Bad Mood, Raising Energy, and Reducing Tension. *Journal of Personality and Social Psychology*, 67:910–925.

The King's Fund (2017). What is social prescribing? Accessed 13/11/2019 at https://www.kingsfund.org.uk/publications/social-prescribing.

Thoma, M. V., Ryf, S., Mohiyeddini, C., Ehlert, U., and Nater, U. M. (2012a). Emotion regulation through listening to music in everyday situations. *Cognition & Emotion*, 26(3):550–560.

Thoma, M. V., Scholz, U., Ehlert, U., and Nater, U. M. (2012b). Listening to music and

physiological and psychological functioning: The mediating role of emotion regulation and stress reactivity. *Psychology and Health*, 27(2):227–241.

Thompson, W. F., Geeves, A. M., and Olsen, K. N. (2019). Who Enjoys Listening to Violent Music and Why? *Psychology of Popular Media Culture*, 8(3):218–232.

Thomson, C. J., Reece, J. E., and Di Benedetto, M. (2014). The relationship between music-related mood regulation and psychopathology in young people. *Musicae Scientiae*, 18:150–165.

Topf, M. (2000). Hospital noise pollution: an environmental stress model to guide research and clinical interventions. *Journal of Advanced Nursing*, 31(3):520–528.

Tourangeau, R. (2006). Survey non-response: a decision-making approach. In *Proceedings of the ESRC Research Methods Festival*, Oxford.

Treurnicht Naylor, K., Kingsnorth, S., Lamont, A., McKeever, P., and Macarthur, C. (2011). The Effectiveness of Music in Pediatric Healthcare: A Systematic Review of Randomized Controlled Trials. *Evidence-Based Complementary and Alternative Medicine*, 2011.

Trondalen, G. and Bonde, O. L. (2012). Music therapy: Models and interventions. In MacDonald, R. A. R., Kreutz, G., and Mitchell, L., editors, *Music, Health and Wellbeing*, pages 40–65. Oxford University Press, Oxford.

Turney, L. and Pocknee, C. (2005). Virtual focus groups: New frontiers in research. *International Journal of Qualitative Research*, 4:1–10.

University of Edinburgh (2019). Research under the General Data Protection Regulation. Retrieved 2 February 2020 from the University of Edinburgh website: https://resource.ppls.ed.ac.uk/lelethics/wp-content/uploads/2018/06/Research-under-GDPR-Handbook.pdf.

Vakharia, D. and Lease, M. (2013). Beyond Mechanical Turk: An analysis of paid crowd work platforms. Retrieved February 3 2017 from the University of Texas website: https://www.ischool.utexas.edu/˜ml/papers/donna-iconf15.pdf.

Van den Tol, A. J. M. and Edwards, J. (2013). Exploring a rationale for choosing to listen to sad music when feeling sad. *Psychology of Music*, 41:440–465.

Van den Tol, A. J. M. and Edwards, J. (2015). Listening to sad music in adverse situations: How music selection strategies relate to self-regulatory goals, listening effects, and mood enhancement. *Psychology of Music*, 43(4):473–494.

van Goethem, A. (2010). *Affect regulation in everyday life: Strategies, tactics, and the role of music*. PhD thesis, Keele University.

van Goethem, A. and Sloboda, J. (2011). The functions of music for affect regulation. *Musicae Scientiae*, 15(2):208–228.

Van Kamp, I. and Davies, H. (2013). Noise and health in vulnerable groups: a review. *Noise Health*, 15(64):153–159.

Västfjäll, D., Juslin, P. N., and Hartig, T. (2012). Music, subjective wellbeing, and health: The role of everyday emotions. In MacDonald, R, A, R., Kreutz, G., and

Mitchell, L., editors, *Music, Health and Wellbeing*, chapter 27, pages 405–423. Oxford University Press, Oxford, 1st edition.

von Georgi, R., Grant, P., von Georgi, S., and Gebhardt, S. (2006). *Personality, emotion and the use of music in everyday life: Measurement, theory and neurophysiological aspects of a missing link - First studies with the IAAM*. Der Andere Verlag, Tönning, Germany.

von Georgi, R., Steinbrück, J., Schütz, M., and Rein, P. (2008). Emotion modulation with music: A Cross-sectional study of the use of music in every-day life in different cohorts. In *Proceedings of the annual conference of the German Society for Music Psychology [Jahrestagung der Deutschen Gesellschaft für Musikpsychologie]*, pages 4–7.

Vuoskoski, J. K., Thompson, W. F., Mcilwain, D., and Eerola, T. (2012). Who enjoys listening to sad music and why? *Music Perception: An Interdisciplinary Journal*, 29(3):311–317.

Wago, H. and Kasahara, S. (2004). Music therapy, a future alternative intervention against diseases. *Advances in Experimental Medicine and Biology*, 546:265–78.

Wang, S., Huang, C., Yao, Y., and Chan, A. (2014). Exploring mental lexicon in an efficient and economic way: Crowdsourcing method for linguistics experiments. In *Proceedings of the 4th Workshop on Cognitive Aspects of the Lexicon*, pages 105–113, Dublin.

Weinberg, M. K. and Joseph, D. (2017). If you' re happy and you know it: Music engagement and subjective wellbeing. *Psychology of Music*, 45(2):257–267.

Willig, C. (2001). *Introducing Qualitative Research in Psychology: Adventures in theory and Method*. Open University Press, Buckingham.

Wilson, O. E. (1999). *Conslience: The unity of knowledge*. Vintage, New York.

Wolf, W., Levordashka, A., Ruff, R. J., Kraaijeveld, S., Lueckmann, M. J., and Williams, D. K. (2015). Ostracism Online: A social media ostracism paradigm. *Behavioral Research Methods*, 47(2):361–373.

World Health Organisation (1946). Constitution of the World Health Organisation. Retrieved 12 October 2016 from the WHO website: https://www.who.int/governance/eb/who_constitution_en.pdf.

World Health Organisation (1986). Ottawa Charter for Health Promotion. Retrieved 17 October 2016 from the WHO website: https://www.who.int/healthpromotion/conferences/previous/ottawa/en/.

World Health Organisation (2015). Health in 2015: from MDGs, Millennium Development Goals to SDGs, Sustainable Development Goals. Retrieved July 3 2019 from the WHO website: https://apps.who.int/medicinedocs/documents/s22230en/s22230en.pdf.

World Health Organisation (2018). World health statistics 2018: monitoring health for the SDGs, sustainable development goals. Retrieved 5 October 2019 from the WHO

website: https://apps.who.int/iris/bitstream/handle/10665/272596/9789241565585-eng.pdf?sequence=1&isA.

World Health Organisation (2019). Global mental health data. Retrieved July 24 2019 from the WHO website: https://www.who.int/gho/mental_health/en/.

Wysocki, A. B. (1996). The effect of intermittent noise exposure on wound healing. *Advanced Wound Care*, 9(1):35–39.

Yamasaki, T., Matsumoto, S., Ikegami, T., and Morizumi, K. (2018). Effects of background music on the mental health and task performance of office workers. In Parncutt, R. and Sattmann, S., editors, *Proceedings of the International Conference on Music Perception and Cognition (ICMPC) 15/European Society for the Cognitive Sciences of Music (ESCOM) 10*, pages 499–502, Graz, Austria. Centre for Systematic Musicology, University of Graz.

Zhang, X. C., Kuchinke, L., Woud, M. L., Velten, J., and Margraf, J. (2017). Survey method matters: Online/offline questionnaires and face-to-face or telephone interviews differ. *Computers in Human Behavior*, 71:172–180.